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ANNUAL REPORT

OF THE

Illinois Farmers' Institute

93521

WITH REPORTS OF

County Farmers' Institutes

FOR THE YEAR 1898.

W. E. ROBINSON, Secretary.

SPRINGFIELD, ILL.
PHILLIPS BROS. STATE PRINTERS
1898.

LETTER OF TRANSMITTAL.

To His Excellency, JOHN R. TANNER, Governor of Illinois:

SIR:—I have the honor to transmit the report of the Illinois Farmers' Institute for the year 1897.

Very respectfully,

W. E. ROBINSON,
Secretary.

SPRINGFIELD, June 24, 1898.

ORGANIZATION ILLINOIS FARMERS' INSTITUTE.

CREATED BY ACT OF 39TH GENERAL ASSEMBLY.

OFFICERS—1897.

Title.	Name.	Residence.
President.....	Amos F. Moore.....	Polo.....
Vice President.....	J. H. Coolidge.....	Galesburg.....
Secretary.....	W. E. Robinson.....	Greenville.....
Treasurer.....	T. W. Wilson.....	Springfield.....
Supt. of Institutes.....	Oliver Wilson.....	Magnolia.....

BOARD OF DIRECTORS.

State Supt. of Public Instruction, S. M. Inglis	Springfield.....
Dean of State Agr. College, Eugene Davenport....	Urbana
President State Board of Agr., J. Irving Pearce...	Chicago
President State Horticult'l Society, H. M. Dunlap.	Savoy
President State Dairymen's Ass'n, Geo. H. Gurler.	DeKalb.....
1st District, Chas. H. Dolton	Dalton Station
2d District, Jonathan Periam	526 Englewood ave., Chicago.....
3d District, Martin Conrad.....	Chicago
4th District, F. C. Rossiter.....	Room 1, No. 91 Washington st., Chicago..
5th District, E. G. Uihlein.....	Chicago
6th District, William Stuart.....	Chicago
7th District, C. J. Lindermann.....	1432 Diversey ave., Chicago.....
8th District, C. D. Bartlett.....	Bartlett.....
9th District, Amos F. Moore.....	Polo.....
10th District, J. H. Coolidge.....	Galesburg
11th District, G. A. Wilmarth	Seneca.....
12th District, F. I. Mann.....	Gilman.....
13th District, F. M. Palmer.....	Clinton
14th District, Oliver Wilson.....	Magnolia.....
15th District, G. W. Dean.....	Adams.....
16th District, A. P. Grout.....	Winchester.....
17th District, Charles F. Mills.....	Springfield.....
18th District, A. A. K. Sawyer.....	Hillsboro.....
19th District, D. H. Shank.....	Paris.....
20th District, L. N. Beal.....	Mt. Vernon.....
21st District, W. R. Kimsey	Tamaroa
22d District, D. W. Prindle.....	Villa Ridge.....

STANDING COMMITTEES.

Executive and Finance—Moore, chairman; Dolton, Grout, Wilmarth, Mann.

Literary Program for State Institute—Wilson, chairman; Grout, Sawyer, Coolidge, Moore; Mills, secretary.

Exhibit and Local Arrangements for State Institute Meeting—Mills, chairman; Dean, Beal, Palmer, Moore.

Special Features for Improvements—Grout, chairman; Inglis, Sawyer, Wilmarth, Moore.

Legislative—Coolidge, chairman; Palmer, Mills, Mann, Inglis, Bartlett, Moore.

AN ACT CREATING THE ILLINOIS FARMERS' INSTITUTE.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That to assist and encourage useful education among the farmers, and for developing the agricultural resources of the State, that an organization under the name and style of "Illinois Farmers' Institute" is hereby created, and declared a public corporation of the State.

§ 2. It shall consist of three delegates from each county of the State, elected annually at the Farmers' Institutes for said county by the members thereof.

§ 3. The affairs of the Illinois Farmers' Institute shall be managed by a board of directors, consisting of

1. State Superintendent of Public Instruction.
2. Professor of agriculture of the University of Illinois.
3. President of the State Board of Agriculture.
4. President of the State Horticultural Society.

5. President of the State Dairymen's Association, and one member from each congressional district of the State, to be selected by the delegates from the district present at the annual meeting of this organization: *Provided*, that the members first selected from the congressional districts of even number shall serve one year, and the members first selected from the congressional districts of odd numbers, shall serve for two years, and that the members selected thereafter to fill expired terms of office shall serve for the period of two years.

§ 4. The Board of Directors of the Illinois Farmers' Institute shall have sole care and disposal of all funds that may be appropriated by the State to sustain the organization, and shall expend the same in such manner as in their judgment will best promote the interest in useful education among the farmers and develop the agricultural resources of the State. The Illinois Farmers' Institute shall make annual report to the Governor of its transactions, which report shall include papers pertaining to its work and addresses made at the annual meeting of the organization, and a classified statement of all moneys received and for all expenditures made, and the Governor shall cause ten thousand (10,000) copies of said report to be printed, one-half for the use of the Illinois Farmers' Institute, and the remainder for the use of the State and General Assembly. It shall make no appropriation without funds in hand to meet same, and the State of Illinois shall in no event be held liable or responsible for any debt, obligation or contract made by the Illinois Farmers' Institute or its Board of Directors.

§ 5. There shall be held annually, under the direction of the Board of Directors, between October 1 and March 1 following of each year, a public meeting of the delegates from county farmers' institutes and of farmers of this State, at such time and place as may be determined by the Board of Directors, of not less than three (3) days' duration, which meeting shall be held for the purpose of developing the greater interest in the cultivation of crops, in the care and breeding of domestic animals, in dairy husbandry, in horticulture, in farm drainage, in improved highways, and general farm management, through and by means of liberal discussions of these and

kindred subjects, and any citizen may take part in these meetings, but only duly elected and accredited delegates from county farmers' institutes shall be permitted to vote in the election of the Board of Directors.

§ 6. The members of each new Board of Directors shall enter upon their duties the next Tuesday after their election, and hold their offices for one or two years, as provided in section 3, or until their successors are elected and enter upon their duties. It shall have power to fill vacancies in the board. It shall organize by the election of a President, Vice President, Secretary, Treasurer and State Superintendent of Farmers' Institutes, and such other officers or agents as may be deemed proper for organizing and conducting the work of the organization, who shall hold their offices for one (1) year, unless removed sooner by the board, and shall perform such duties as may be required of them by rules of the board. The Secretary, Treasurer and Superintendent may be other than members of the board.

§ 7. Rooms in Capitol building shall be assigned to the officers of this organization by the proper authority, which shall then be under the control of the board of Directors.

§ 8. The Board of Directors may make and enforce such rules and by-laws, not in conflict with the laws of this State, as will render its work most useful and efficient.

§ 9. For the purpose mentioned in the preceding sections, said Board of Directors may use such sum as it may deem proper and necessary, not exceeding the amount appropriated therefor by the General Assembly from the general fund for that purpose: *Provided, further*, that the

1. State Superintendent of Public Instruction,
2. Professor of Agriculture of the University of Illinois,
3. President of the State Board of Agriculture,
4. President of the State Horticultural Society,
5. President of the State Dairymen's Association,

And the present congressional representatives of the Illinois Farmers' Institute Association shall constitute the first Board of Directors of this organization, who shall have charge of the affairs of the same until their successors have been duly elected, and enter upon their duties as provided in this act.

APPROPRIATIONS FOR STATE AND COUNTY FARMERS' INSTITUTES.

The first appropriations for the Illinois Farmers' Institute was made by the last General Assembly and became available July 1, 1897.

The following is the institute bill passed at the last session of the Illinois Legislature:

WHEREAS, To assist and encourage useful education among farmers and for developing the agricultural resources of the State, the Thirty-ninth General Assembly created an organization under the name and style of the Illinois Farmers' Institute, and entrusted to it the development of a greater interest in the cultivation of crops, in the breeding and care of domestic animals, in dairy husbandry, in horticulture, in farm drainage, in improved highways, and general farm management, through and by means of liberal discussion of these and kindred subjects; and for improving the condition of the farmer by affording a better knowledge of successful agriculture.

Therefore, to sustain the same:

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That there be and is hereby appropriated to the Illinois Farmers' Institute the following sums, to-wit:

1. For expressage, stationery, postage, office expenses, furniture, etc., the sum of twelve hundred dollars (\$1,200) per annum for the years 1897 and 1898.

2. For the expense of collecting an institute library the sum of one hundred dollars (\$100) per annum for the years 1897 and 1898.

3. For the expense of collecting matter and preparing manuscript, editing the annual report, and bulletins, clerk hire, etc., the sum of twelve hundred dollars (\$1,200) per annum for the years 1897 and 1898.

4. For the actual expense of district directors, and of able and practical speakers to be furnished by the Illinois Farmers' Institute to the County Farmers' Institutes, for the purpose of assisting in making their meetings of general interest and of the greatest practical benefit; for expense of organizing county institutes in counties not now organized; for the expense of printing programs, advertising, and for speakers and exhibit at the State Institute, the sum of five thousand dollars (\$5,000) per annum for the years 1897 and 1898: *Provided*, that county institutes, or their representatives, shall be permitted to select their own speakers, and to have such topics for consideration as shall be of especial interest to their respective localities.

5. For the use of each County Farmers' Institute the sum of fifty dollars (\$50) per annum for the years 1897 and 1898. To be paid the treasurer of each County Farmers' Institute when such institute shall file with the secretary of the Illinois Farmers' Institute a sworn statement which shall show that said County Farmers' Institute has held one or more public sessions annually of not less than two days at some easily accessible location, which shall include an itemized bill of its expenses, a copy of its program and printed proceedings, showing the title of the papers read and by whom, and place or places of meeting, with daily average attendance, and such other information as may be needed by the Illinois Farmers' Institute to successfully assist this work.

Sec. 2. No officers or officer of any County Farmers' Institute shall be entitled to or receive any moneyed compensation whatever for any service rendered the same.

Sec. 3. That on the order of the president, countersigned by the secretary of the Illinois Farmers' Institute, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois Farmers' Institute for the sums herein appropriated: *Provided*, that each warrant on account of a County Farmers' Institute shall show the county for whose benefit the same is drawn: *Provided further*, that if the necessary expense of a County Farmers' Institute shall not equal said sum of fifty dollars as aforesaid, then said warrant shall only be drawn for the sum expended.

ANNOUNCEMENT.

The General Assembly, appreciating the great benefits resulting from the holding of Farmers' Institute Meetings, passed a law creating the Illinois Farmers' Institute, for the purpose of developing a greater interest, through said organization, in the better cultivation of crops, in the care and breeding of the most profitable type of domestic animals, in extending dairy husbandry, promoting horticulture, directing attention to the importance of farm drainage, stimulating the spirit of improvement in the construction of the public roads, and discussing the best methods of general farm management.

The Board of Directors of the Illinois Farmers' Institute fully appreciate the magnitude of the work to be accomplished to meet the expectations of the intelligent and progressive element represented by the organization.

The members of the Board are under many obligations to the progressive farmers of the State for assurances of their earnest purpose to contribute to the success of the Institute work, and for hearty co-operation received.

In presenting the programme for the third annual meeting of the Illinois Farmers' Institute, the Directors have every reason to congratulate the public on the recognized ability of the speakers who have volunteered their services and the wide range of topics to be discussed by the gentlemen named on the following pages:

All of the speakers announced have signified their acceptance of the invitation to attend, and will be present and address the Institute.

The Beardsley Hotel will be the hotel headquarters, where the delegates are requested to meet the officers of the Illinois Farmers' Institute as soon as convenient after arrival.

Question Box.—At the close of each address an opportunity will be given any one in attendance to send the speaker, on a slip of paper, any question pertaining to the subject under discussion, concerning which information is desired.

ILLINOIS FARMERS' INSTITUTE CONVENTION OF DELEGATES

TUESDAY, FEBRUARY 22, 1898.

Morning Session—9 o'clock a. m. University Hall, University of Illinois.

Hon. Amos F. Moore, Chairman.

Music.

Prayer, Rev. W. H. Stedman, Pastor of First Baptist Church, Champaign.

Address of Welcome, Hon. A. S. Draper, President University of Illinois, Champaign.

Response, Hon. Oliver Wilson, Magnolia.

Music.

President's Address, Hon. Amos F. Moore, Polo.

Report Superintendent of Institutes, Hon. Oliver Wilson, Magnolia.

Report of the condition of the Farmers' Institute work in the several Congressional Districts by the directors representing the same, viz:

District.	Name.	Residence.
1st District	Chas. F. Dolton	Dolton Station
2d District	Jonathan Periam	526 Englewood av., Chicago...
3d District	Martin Conrad	Chicago
4th District	F. C. Rossiter	91 Washington st., Chicago ...
5th District	E. G. Ublein	Chicago
6th District	William Stuart	Chicago
7th District	C. J. Linderman	Chicago
8th District	C. D. Bartlett	Bartlett
9th District	Amos F. Moore	Polo
10th District	J. H. Coolidge	Galesburg
11th District	G. A. Wilmarth	Seneca
12th District	F. I. Mann	Gilman
13th District	F. M. Palmer	Clinton
14th District	Oliver Wilson	Magnolia
15th District	G. W. Dean	Adams
16th District	A. P. Grout	Winchester
17th District	Chas. F. Mills	Springfield
18th District	A. A. K. Sawyer	Hillsboro
19th District	D. H. Shank	Paris
20th District	L. N. Beal	Mt. Vernon
21st District	W. R. Kimsey	Tamaroa
22d District	D. W. Prindle	Villa Ridge

Addresses by Delegates representing County Farmers' Institutes.
Adjournment.

Afternoon Session—1:30 o'clock p. m.

Hon. H. H. Harris, Chairman, Champaign, President Champaign County Agricultural Society.

Music.

Address—"Our Horticultural Interests," Hon. H. M. Dunlap, President State Horticultural Society.

Address—"Our Dairy Interests," Hon. A. G. Judd, Vice-President State Dairymen's Association, Dixon.

Address—"Our Poultry Interests," Hon. L. H. Griffith, Danville.

Address—"Our Bee Keepers' Interests," Hon. J. A. Stone, Bradfordton, Secretary Illinois Bee Keepers' Association.

Address—"Horticulture in Southern Illinois," Mr. Alvin C. Beal, Mt. Vernon.

Discussion of above addresses.

Adjournment.

Evening Session—7:30 o'clock p. m.

A. S. Draper, Chairman, President University of Illinois.

Experiment Station Session.

Music.

* "The Sugar Beet Industry for Illinois," Perry G. Holden, Champaign, Assistant Professor of Agricultural Physics.

Investigation into the Cost of Growing Corn, Dr. David Kinly, Professor of Economics.

State Control of Injurious Insects, Dr. Stephen A. Forbes, State Entomologist.

Aims and Scope of the Agricultural Experiment Station, Dr. T. J. Burrill, President Advisory Board.

Discussion of above addresses.

* A Sugar Beet Convention will be held at the University, beginning immediately after the close of the annual meeting of the Illinois Farmers' Institute. Experts from Nebraska and elsewhere have been secured.

WEDNESDAY, FEBRUARY 23, 1898.

From 8:30 to 10 o'clock will be devoted to an inspection of the buildings and grounds of the University of Illinois by all in attendance at the Illinois Farmers' Institute.

Morning Session—10 o'clock a. m.

Hon. A. P. Grout, Chairman, President Illinois Live Stock Breeders' Association.

Live Stock Session.

Music.

Prayer, Rev. J. F. Wohlfarth, Pastor of First Methodist Church, Urbana.

Address—"Cattle Feeding," Mr. A. C. Rice, Arnold.

Address—"The Horse Market," Mr. F. J. Berry, Stock Yards, Chicago.

Address—"Our Sheep Industry," Hon. J. M. Bell, President Illinois Sheep Breeders' Association, Decatur.

Address—"Our Swine Industry," Mr. Fred H. Rankin, President Illinois Swine Breeders' Association, Athens.

Discussion of above addresses.

Adjournment.

Afternoon Session—1:30 o'clock p. m.

Mr. Fred Hatch, Chairman, President Alumni Association, University of Illinois.

Music.

Address—"Our Live Stock Interests," Hon. A. P. Grout, President Illinois Live Stock Breeders' Association, Winchester.

Address—"The Farm Dairy," Mr. Ralph Allen, Delavan.

Address—"How to Increase the Interest in Fine Stock Breeding in Illinois," Mr. Fred Hatch, Spring Grove.

Address—"Farm Telephone," Mr. C. C. Mills, Decatur.

Discussion of above addresses.

Adjournment.

Evening Session—7:30 o'clock p. m.

A. D. Hall, Chairman, Vice-President Agricultural Club, University of Illinois.

College Session.

Music.

Horticultural Interests of Illinois, J. C. Blair, Champaign, Instructor in Horticulture.

Advantages and Disadvantages of Inter-Breeding among Domestic Animals—(Paper from data collected in class work), F. D. Linn, Champaign, President Agricultural Club, University of Illinois.

Fixation of Nitrogen by Plants and its Relation to Agriculture—(Exactly as prepared in class study some months ago), E. T. Robbins, Champaign, Class of 1900.

Kinds of Cultivation for Indian Corn—(Report of his own experiments in the fields of the University Farm, summer of 1897), A. D. Shamel, Champaign, Class of 1898, Editor "Illinois Agriculturist."

Discussion of Relations between the Farmers and the State Colleges, E. Davenport, Urbana, Dean of the College of Agriculture.

CONVENTION OF DELEGATES, ILLINOIS FARMERS' INSTITUTE.

Hon. A. F. Moore, Chairman.

The delegates from the several Congressional districts will meet for conference at 8:30 o'clock a. m., Thursday, February 24, 1898, in Faculty room, University hall, and select directors of the Illinois Farmers' Institutes for the Congressional districts of odd numbers as provided in the act of the General Assembly creating the same, and after the reports by Congressional delegations of the election of directors to serve for the ensuing two years as members of the Illinois Farmers' Institute, the programme for the morning session will be considered.

PROGRAMME ILLINOIS FARMERS' INSTITUTE.

UNIVERSITY HALL, UNIVERSITY OF ILLINOIS, THURSDAY, FEBRUARY 24, 1898.

Morning Session—9:30 o'clock a. m.

Mrs. Mary Turner Carriel, presiding, Trustee University of Illinois, Jacksonville.

Music.

Prayer, Rev. C. N. Wilder, Pastor First Presbyterian Church, Champaign.

Address—"The Housekeepers' Club," Mrs. H. M. Dunlap, Savoy.

Address—"Domestic Economy," Mrs. Nellie S. Kedzie, Bradley Polytechnic Institute, Peoria.

Address—"Our Farmers' Girls," Mrs. L. G. Chapman, Freedom.

Address—"The Thinking Farmer," Hon. Geo. H. Gordon, Paris.

Discussion of above topics.

Adjournment.

Afternoon Session—1:30 o'clock p. m.

Hon. John R. Tanner, Governor of Illinois, Chairman.

Music.

Address—"Economics in Agriculture," Hon. J. A. Mount, Governor of Indiana, Indianapolis.

Address—"The Results of Farmers' Institutes," Hon. C. G. Luce, Ex-Governor of Michigan, Coldwater.

Address—"Present Status of Farmers' Institutes," Hon. George McKerrrow, Madison, Superintendent of Farm Institutes, Wisconsin.

Address—"The Future of Farmers' Institutes," Prof. W. C. Latta, Professor of Agriculture and Superintendent of Institutes, Indiana, LaFayette.

Discussion of above topics.

Adjournment.

LIST OF SUBJECTS AND SPEAKERS

SUGGESTED TO THE OFFICERS OF COUNTY FARMERS' INSTITUTES IN ILLINOIS WHO WILL ATTEND MEETINGS IN 1897-1898 FOR THEIR EXPENSES, WHEN CALLED UPON.

T. J. Burrill, Dean of the General Faculty, and Professor of Botany and Horticulture. 1. Water and Vegetation. 2. Orchard Trees. Last week in November or first week in December.

S. A. Forbes, Dean of the College of Science, and Director of State Laboratory of Natural History. Economic Entomology,—to be developed according to the locality and the circumstances. Any week in January, after January 8th.

E. Davenport, Dean of the College of Agriculture, and Director of Experiment Station. 1. Agricultural Education. 2. Live Stock on the Farm. January 10th to 15th.

Donald McIntosh, Professor of Veterinary Science, Diseases of Farm Animals. Thursday and Friday of any three weeks in December.

P. G. Holden, Assistant Professor of Agricultural Physics. 1. Sugar Production in Illinois. 2. The Soil, Its Character and Management. January 24th to the 29th.

W. J. Fraser, Instructor in Dairying. Variations in Milk. Any week in November.

G. P. Clinton, Assistant in Botany. 1. Fungous Foes of Cultivated Crops. 2. Weeds. Second week in December.

J. C. Blair, Instructor in Horticulture. Subject to be arranged with him through correspondence. January 17th to 22d.

AGRICULTURAL EDUCATION.

Name.	Residence.
Burke, W. H.	334 Dearborn St., Chicago.
Dean, G. W.	Adams.
Freeman, J. H.	Springfield.
Higgins, F. M.	Seneca.
Howland, E.	Ottawa.
Inglis, S. M.	Springfield.
Wood, David Ward.	334 Dearborn St., Chicago.

GENERAL AGRICULTURE.

Name.	Residence.
King, L. F.	Augusta.
Mellvihill, A. H.	Normal.
Morris, Robert.	Olney.
Sawyer, A. A. K.	Hillshoro.
Spies, L. A.	St. Jacobs.

CORN CULTURE.

Name.	Residence.
Begeley, J. H.....	Sibley.....
Brown, Stuart.....	Springfield.....
Loughlin, M. O.....	Seneca.....
Smith, H. K.	Mt. Palatine.....

WHEAT CULTURE.

Name.	Residence.
Douglas, L. G.....	Marseilles.....
Spencer, S. M.....	Payson.....
Trotter, D. Q.....	Piasa.....

CLOVER AS A FEED AND FERTILIZER.

Name.	Residence.
Carter, Joseph.....	Champaign.....
Vittum, D. W.....	Canton.....

HORTICULTURE AND FRUITS FOR THE FARM.

Name.	Residence.
Augustine, Henry.....	Normal.....
Beal, L. N.....	Mt. Vernon.....
Buckman, B. F.....	Farmingdale.....
Carpenter, D. L.....	Dixon.....
Dennis, C. N.....	Hamilton.....
Dunlap, H. M.....	Savoy.....
Earl, S. G.....	Quincy.....
Goodrich, T. E.....	Cobden.....
Moore, A. F.....	Polo.....
Reihl, E. A.....	Alton.....

MARKETING FARM CROPS.

Name	Residence.
Carr, H. H.....	Chicago.....
Trumbo, M. P.....	Ottawa.....

HARVESTING AND FEEDING FORAGE CROPS.

Name.	Residence.
King, S. Noble.....	Bloomington.....
Oatman, Ed.....	Dundee.....

HORSES.

Name.	Residence.
Berry, T. J.....	Chicago
Baker, J. C.....	Manhattan
Burgess, Robert	Wenona
Cooper, John S.....	Chicago
Fletcher, James	Wayne.....
Pritchard, William	Ottawa
Virgin, John	Chicago

CATTLE.

Name.	Residence.
Burk, Lemuel.....	Golden
Chester, E. E.....	Champaign.....
Grout, A. P.....	Winchester
Pedicord, Charles	Marseilles.....
Pickrell, J. H.....	Springfield.....
Rice, A. C.....	Arnold.....

SWINE.

Name.	Residence.
Gore, David	Carlinville
Griffith, W. G.....	Clear Creek
Lemen, F. B.....	Collinsville
Lovejoy, A. J.....	Roscoe.....
McCracken, D. P.....	Paxton.....
Rankin, Fred H.....	Athens
Trone, G. W.....	Rushville.....
Wilmarth, G. A.....	Seneca.....
Young, W. A	Butler

SHEEP.

Name.	Residence.
Bell, R. M.....	Decatur.....
Bonnell, Oscar	Leroy.....
Lovejoy, A. J.....	Roscoe.....
Swanzey, L. M.....	Ridott.....

ROTATION OF CROPS.

Name.	Residence.
Giller, E. A.....	White Hall
Thompson, J. M.....	Joliet.....

POULTRY.

Name.	Residence.
Judy, Mrs. R. A.....	Long Creek.....
Purvis, Miller	Chicago
Wyman, B. F.....	Sycamore.....

BEE KEEPING.

Name.	Residence.
Debolt, Cyrus.....	Ottawa.....
Miller, C. E.....	Marengo.....
Stone, James A.....	Bradfordton.....

DAIRY.

Name.	Residence.
Allen, Ralph.....	Delavan.....
Gurler, H. B.....	DeKalb
Hostetter, W. R.....	Mt. Carroll.....
Monrad, J. H.....	Winnetka.....
Redington, Charles	Seneca.....
Wright, Samuel.....	Elgin.....

DOMESTIC ECONOMY.

Name.	Residence.
Bedell, Mrs L. L.....	Holder.....
Boyd, Mrs. E. L.....	Seneca.....
Chapman, Mrs. L. G	Freedom.....
Dean, G. W.....	Adams.....
Kedzie, Mrs. Nellie S.....	Peoria.....
Raymond, Mrs.....	Sidney.....
Reihl, Miss Helen.....	Alton.....

VETERINARY SCIENCE.

Name.	Residence.
Fry, Dr. E. H.....	Naperville.....
Lovejoy, C. P.....	Princeton.....
Mills, Dr. C. C.....	Decatur.....
Wilson, Dr.....	Mendota.....

CO-OPERATION.

Name.	Residence.
Bell, G. F.....	Lostant.....
McGrath, W. B.....	Manhattan.....

BENEFITS OF FARMERS' INSTITUTES.

Name.	Residence.
Morgan, R. T.....	Wheaton.....
Palmer, F. M.....	Clinton.....
Wilmarth, G. A.....	Seneca.....

COUNTRY TELEPHONES.

Name.	Residence.
Mills, Clarence C.....	Decatur.....
Stone, Percy.....	Bradfordton.....

MUTUAL FARM INSURANCE.

Name.	Residence.
Brumback, David.....	Danforth.....
George, Milton	Chicago
Grove, Samuel.....	Utica.....
Mills, Charles F.....	Springfield.....
Seiler, J. E.....	Mt. Carmel.....

PUBLIC ROADS.

Name.	Residence.
Dean, G. W	Adams.....
Baldwin, A. C.....	Deer Park.....
Prime, S. T. K.....	Dwight.....
Smith, D. W.....	Springfield.....

FARM FENCES.

Name.	Residence.
Coleman, L. H.....	Springfield.....
Gallup, John.....	Stavanger

AGRICULTURAL FAIRS.

Name.	Residence.
Madden, George.....	Mendota
Mills, Charles F.....	Springfield.....

ATTRACTIONS OF FARM HOMES.

Name.	Residence.
Chapman, Mrs. L. G.....	Freedom.....
Chittenden, Miss.....	Mendon.....

RURAL MAIL DELIVERY.

Name.	Residence.
Ellsworth, U. S.....	Deer Park.....
Madison, J. W.....	Plainville.....
Stahl, John M.....	Chicago
Workman, B. F.....	Auburn.....

POSTAL SAVINGS BANKS.

Name.	Residence.
Curtiss, G. W.....	Freeport
Madison, J. W.....	Plainville.....
O'Malley, M	Seneca.....

AGRICULTURAL STATISTICS.

Name.	Residence.
Prime, S. T. K.....	Dwight.....
Snow, Bernard A.....	Chicago (Orange Judd Farmer)....

MARKETING OF LIVE STOCK.

Name.	Residence.
Baker, Charles W.....	Union Stock Yards, Chicago.....
Hoag, M. J.....	Seneca
Pearce, John.....	Bowen

THE FARMERS' GARDEN.

Name.	Residence.
Earl, S. G.....	Quincy.....
Periam, Jonathan.....	Chicago
Waghorn, Mr.....	Marseilles.....

DRAINAGE.

Name.	Residence.
Middaugh, Henry.....	Clarendon Hills.....
Prime, S. T. K.....	Dwight.....

LIST OF STATE SPEAKERS REQUIRING COMPENSATION.

E. S. Fursman, ElPaso, Ill. \$5 per day and expenses.
O. J. Vine, Canton, Ohio. \$4 per day and expenses.
W. B. Hoard, Fort Atkinson, Wis. Dairy. \$100 per week and expenses.
A. G. Judd, Dixon, Ill. Terms made known on application.
Mrs. Loyd, Glen Ellyn, Ill. Household Economy. Terms made known on application.

COUNTY FARMERS' INSTITUTE MEETINGS.

The County Farmers' Institutes, in the counties named below, have appointed or held meetings in the current Institute season, as follows:

CONGRESSIONAL DISTRICTS.

Directors—1st, Charles Dolton, Dolton Station; 2d, Jonathan Periam, Englewood; 3d, Martin Conrad, Chicago; 4th, F. C. Rossiter, Chicago; 5th, E. G. Uehlein, Chicago; 6th, William Stewart, Chicago; 7th, C. J. Linderman, Chicago.

County.	Location.	Date.
Cook.....	Chicago Heights.....	Feb. 16, 17, 18, 1898.....
Lake.....	.....	.....

EIGHTH CONGRESSSIONAL DISTRICT.

Director, C. D. Bartlett, Bartlett.

County.	Location.	Date.
DeKalb.....	Sycamore	Feb. 9, 10, 1898.....
DuPage	Wheaton	Feb. 16, 17, 18, 1898.....
Kane .....	.....	.....
Kendall	Yorkville.....	Feb. 9, 10, 1898.....
Grundy.....	Mazon	Feb. 10, 11, 1898.....
McHenry.....	Woodstock	Jan. 27, 28, 1898.....

NINTH CONGRESSIONAL DISTRICT.

Director, A. F. Moore, Polo.

County.	Location.	Date.
Boone.....	Irene.....	Feb. 2, 3, 1898.....
Carroll	Shannon.....	Dec. 8, 9, 1897.....
JoDaviess	Elizabeth.....	Mar. 2, 3, 1898.....
Lee	Dixon.....	Feb. 3, 4, 1898.....
Ogle.....	Forreston	Feb. 1, 2, 1898.....
Stephenson	Freeport.....	Feb. 1, 2, 1898.....
Winnebago	Rockford.....	Jan. 25, 26, 1898.....

TENTH CONGRESSIONAL DISTRICT.

Director, J. H. Coolidge, Galesburg.

County.	Location.	Date.
Henry	Galva	Jan. 18, 19, 20, 1898.....
Knox	Salisbury.....	Feb. 10, 11, 12, 1897.....
Mercer	Joy.....	Dec. 9, 10, 1897.....
Rock Island.....	Milan	Jan. 11, 12, 1898.....
Stark	Wyoming.....	Jan. 4, 5, 1898.....
Whitesides	Morrison	Feb. 10, 11, 1898.....

ELEVENTH CONGRESSIONAL DISTRICT.

Director, G. A. Wilmarth, Seneca.

County.	Location.	Date.
Bureau	Princeton	Jan. 20, 21, 1898.....
LaSalle.....	Ottawa	Dec. 16, 17, 1897.....
Livingston.....	Pontiac.....	Jan. 11, 12, 1898.....
Woodford.....	Minonk.....	Feb. 17, 18, 1898.....

TWELFTH CONGRESSIONAL DISTRICT.

Director, F. I. Mann, Gilman.

County.	Location.	Date.
Iroquois.....	Watseka.....	Jan. 19, 20, 1898.....
Kankakee	Danville.....	Feb. 15, 16, 1898.....
Vermilion.....	Joliet	Feb. 10, 11, 12, 1898.....
Will		

THIRTEENTH CONGRESSIONAL DISTRICT.

Director, F. M. Palmer, Clinton.

County.	Location.	Date.
Champaign	University of Illinois....	Dec. 14, 15, 1897.....
DeWitt	Clinton	Jan. 18, 19, 20, 1898.....
Douglas	Arcola	Jan. 13, 14, 1898.....
Ford Ind. Ass'n.....	Sibley	Jan. 6, 7, 1898.....
Ford.....	Paxton.....	Jan. 26, 28, 1898.....
McLean	Bloomington.....	Jan. 13, 14, 1898.....
Piatt.....	Bement.....	Jan. 20, 21, 1898.....

FOURTEENTH CONGRESSIONAL DISTRICT.

Director, Oliver Wilson, Magnolia.

County.	Location.	Date.
Fulton.....		
Mason.....	Forest City.....	Dec. 8, 9, 1897.....
Marshall.....	Lacon.....	Jan. 5, 6, 1898.....
Peoria.....		
Putnam.....	Granville.....	Jan. 13, 14, 1898.....
Tazewell.....	Delavan.....	Feb. 2, 3, 1898.....

FIFTEENTH CONGRESSIONAL DISTRICT.

Director, G. W. Dean, Adams.

County.	Location.	Date.
Adams.....	Golden.....	March 10, 11, 1898.....
Brown.....	Mt. Sterling.....	Dec. 28, 29, 1897.....
Hancock.....	Carthage.....	Dec. 23, 24, 1897.....
Henderson.....	Stronghurst.....	Feb. 15, 16, 1898.....
McDonough.....	Macomb.....	Oct. 28, 29, 1897.....
Schuyler.....	Rushville.....	Dec. 9, 10, 1897.....
Warren.....	Monmouth.....	Feb. 17, 18, 1898.....

SIXTEENTH CONGRESSIONAL DISTRICT.

Director, A. P. Grout, Winchester.

County.	Location.	Date.
Calhoun.....	Hardin.....	Dec. 17, 18, 1897.....
Cass.....	Virginia.....	—, 1898.....
Greene.....	Roodhouse.....	Feb. 1, 2, 1898.....
Jersey.....	Jerseyville.....	Feb. 8, 9, 1898.....
Macoupin.....	Carlinville.....	March, 1898.....
Morgan.....	Jacksonville.....	Dec. 1, 2, 3, 1897.....
Pike.....	Griggsville.....	Feb. 3, 4, 1898.....
Scott.....	Winchester.....	Jan. 12, 13, 1898.....

SEVENTEENTH CONGRESSIONAL DISTRICT.

Director, Charles F. Mills, Springfield.

County.	Location.	Date.
Christian.....	Taylorville.....	Jan. 19, 20, 1898.....
Logan.....	Lincoln.....	Jan. 20, 21, 1898.....
Macon.....	Decatur.....	Feb. 2, 3, 1898.....
Menard.....	Petersburg.....	Jan. 18, 19, 1898.....
Sangamon.....	Pleasant Plains.....	Oct. 15, 16, 17, 1897.....

EIGHTEENTH CONGRESSIONAL DISTRICT.

Director, A. A. K. Sawyer, Hillsboro.

County.	Location.	Date.
Bond	Sorento.....	Sept. 16, 17, 1897.....
Fayette.....	.....	.....
Madison.....	Bethalto.....	Oct. 28, 29, 30, 1897.....
Montgomery	Hillsboro	Jan. 12, 13, 1898.....
Moultrie.....	.....	.....
Shelby .....	.....	.....

NINETEENTH CONGRESSIONAL DISTRICT.

Director, D. H. Shank, Paris.

County.	Location.	Date.
Clark	Marshall.....	Jan. 13, 14, 1898.....
Coles	Charleston	Dec. 10, 11, 1897.....
Crawford.....	Robinson.....	Dec. 28, 29, 1897.....
Cumberland.....	Toledo.....	March 9, 10, 1898.....
Edgar.....	Paris.....	Jan. 26, 27, 1898.....
Effingham.....	Effingham	Feb. 18, 19, 1898.....
Jasper.....	Newton.....	Dec. 8, 9, 1897.....
Lawrence.....	Lawrenceville.....	Feb. 23, 24, 1898.....
Richland	Olney.....	February, 1898.....

TWENTIEH CONGRESSIONAL DISTRICT.

Director, L. N. Beal, Mt. Vernon.

County.	Location.	Date.
Clay	Flora.....	Feb. 16, 17, 1898.....
Edwards	Bone Gap.....	Dec. 1, 2, 1897.....
Franklin.....	Benton .....	....., 1898.....
Gallatin	Shawneetown	Dec. 15, 16, 1897.....
Hamilton.....	McLeansboro.....	March 4, 5, 1898.....
Hardin	Elizabethtown .....	....., 1898.....
Jefferson.....	Mt. Vernon.....	Oct. 12, 13, 14, 1897.....
Wabash	Mt. Carmel.....	Oct. 23, 24, 1897.....
Wayne.....	Jeffersonville	Jan. 21, 22, 1898.....
White.....	.....	.....

TWENTY-FIRST CONGRESSIONAL DISTRICT.

Director, W. R. Kimsey, Tamaroa.

County.	Location.	Date.
Clinton	Carlisle.....	Feb. 25, 26, 1898.....
Marion.....	Salem.....	Feb. 10, 11, 1898.....
Monroe .....	.....	.....
Perry	Pinckneyville.....	Jan. 27, 28, 1898.....
Randolph	Sparta	Jan. 25, 26, 1898.....
St. Clair.....	Belleville.....	Jan. 19, 20, 1898.....
Washington.....	Nashville.....	Feb. 9, 10, 1898.....

TWENTY-SECOND CONGRESSIONAL DISTRICT.

Director, D. W. Prindle, Villa Ridge.

County.	Location.	Date.
Alexander.....
Jackson
Johnson.....
Massac
Pope
Pulaski.....
Saline
Union
Williamson

PROCEEDINGS OF THE THIRD ANNUAL MEETING OF THE ILLINOIS FARMERS' INSTITUTE.

Held in the Chapel of the University of Illinois at Urbana, Illinois, on February 22, 23 and 24, 1898.

The meeting was called to order by Hon. Amos F. Moore, of Polo, Illinois, President of the Institute, at 9 o'clock a. m., February 22, 1898.

The President: The Rev. W. H. Stedman, Pastor of First Baptist Church, Champaign, Illinois, will open the third annual meeting of the Illinois Farmers' Institute with prayer.

PRAYER BY REV. STEADMAN.

The President: We will now have the pleasure of listening to the address of welcome by Hon. A. S. Draper, President of the University of Illinois.

Hon. Andrew Sloan Draper, President of the University of Illinois, delivered the following

ADDRESS OF WELCOME.

Mr. President, Ladies and Gentlemen:—I had only expected to come in at the opening session and say a few words in the way of greeting to the convention; but a few moments ago the President of the Institute was kind enough to come and say to me that Superintendent Wilson, who was to make a response to the address of welcome, had been delayed in arriving here by reason of the storm, and wished I would kill time for a while, and so make sure that the morning should be occupied. I speak of this by way of apology for occupying more than I should otherwise feel justified in occupying.

I am glad enough, indeed, to have any opportunity to talk to anybody about matters of mutual concern, and never lose any reasonable opportunity to talk to people whom I would be glad to have more closely interested in the affairs of the State University. I am especially glad to be able to say something to this audience in that connection.

I had intended to seize the opportunity at the opening of the meeting this evening, over which I am to preside, to say these things, but under the conditions which obtain, it will be better perhaps for me to discuss them a little more at length now, and relieve you this evening.

HON. A. S. DRAPER.

It goes without saying that everybody at the State University is delighted with your presence. We have looked forward to this meeting with pleasant anticipations, and it ought to be, and I have no doubt is, unnecessary for me to say that you are altogether welcome here. It is the earnest desire of everybody connected with the administration of the University, and the student body, that you should feel entirely at home while you are here. You are entirely free to go wheresoever you will—in the buildings and upon the property—so far as you can find things that will be of interest to you.

We shall do what we can to make your stay agreeable. The musical organizations of the University will be glad to entertain you at the opening of the sessions, particularly the evening sessions. They will begin at 7:30 p. m. The first twenty minutes—possibly thirty minutes—will be given up to a musical programme. Now, our musical organizations are a little sensitive about being interrupted in the midst of a programme. If one is sensitive it is a musician, you know. So I will ask you to be good enough to be prompt at the opening of the evening sessions.

You are under the roof of a great State University.

State universities have come into being within the last fifty years—almost all of them, in this country. The starting of State universities was a great new national educational movement. There has never been any more marked and decisive educational movement in the history of this country than that which resulted in the organization of the State University. These universities, which are to be found in every State west of the Alleghany Mountains—in every State west of New York and Pennsylvania—have come to be the foremost educational institutions in that whole region, and they have come to rival—very strongly rival—the oldest and largest universities in the country.

The ten State universities in the ten North Central States, excluding the two Dakotas, for example, have more than sixteen thousand students in college and professional courses. These universities have resulted from the action of the general government and the action of the States.

It was in the midst of the civil war that Congress passed the Morrill Act which gave the impulse to this great national educational movement. That act provided land grants for the State that would establish educational institutions according to its provisions. And all the States, practically, have seized upon that act and availed themselves of its provisions.

There were two great aims in the minds of Congress, doubtless, and in the mind of the President, during the war period, which led up to this legislation. I suppose there were two great things in view. One was the carrying of a college to the very doors of the people. For all time, in all the world's history up to that time, the higher education had been provided with reference to the aristocracy and nobility, and the money interests. The English universities were chartered, supported and managed by the aristocracy in pursuance of the English plan, without so much as a thought about carrying the higher education to the producing multitudes.

The older American universities in the United States followed the English plan very naturally. They were started by Englishmen, and they were started in the Colonial Governments, at the time when they gave allegiance to Great Britain, and very naturally they would follow the English plan. These new Western State universities, however, were established with the principal thought in mind that their work should be applied to the industries of the people; to the agricultural, mechanical and commercial interests of the nation.

It was a wise thought. It was a great patriotic movement and suggestion of the highest consequence to the people of the country and the strength of the nation. A nation is not going to hold its own unless it is a nation of workers. Education is the application of scientific principles to work. No nation can hope to be strong unless it is a nation of workers, and unless it makes the best possible use of scientific principles in the extension and carrying on of its work. So that the National Government provided that while the old line work, which had been continued, and which had been carried on in the English and earlier American universities should still be continued in

these new State universities. It, however, at the same time made special provision that special reference should be had to the agricultural and mechanical industries. That was one of the great thoughts expressed in the congressional legislation which produced this University.

The other great thought expressed in that act was to train the young men for service in the army if needed. Very happily we have, in the last thirty-five years, since the passage of the Morrill Act, had little occasion to feel the necessity of the training of educated young men for service in the army; but at the time that act was approved by Abraham Lincoln a most imperative necessity existed for it.

The Morrill Act was approved upon the 2d day of July, 1862. Upon the 1st day of July, 1862, the President of the United States had issued a call for three hundred thousand more men for service in the army, and the exigencies which necessitated that call were extreme. It was the very darkest day in the history of the United States. There never was a darker day in all our history. There never was a day of more gloomy foreboding than the first day of July, 1862. It was first at the end of a long, melancholy series of national disasters upon the James river, in which more than fifteen thousand young men—soldiers—had lain down their lives that this nation might live; and it was not strange that this great congressional act providing for a great system of advanced educational interests should embody within it a provision that military science should be taught in those institutions.

The result of these two leading provisions in this congressional act will be seen readily in this State University, as in all the great State universities.

You will find here an agricultural department and an engineering department. One striving to improve the agricultural industries and the other striving to advance the mechanical industries.

You, gentlemen, will probably be more interested in that part of the work which relates to agriculture than in the other departments.

There is no more difficult undertaking—I say it with frankness—for the University than the advancement of agricultural industries. The conditions, when once thought of, which make it difficult will be readily recognized.

A university assumes, and is bound to assume, in the first place, that students who come to it are prepared for advanced grade work—for work of the highest grade. A university can not properly undertake the work which the high schools to be found in every town of the State ought to do; for the very good reason that it is not the sound policy of the State, and it ought not to be undertaken by the State to do a thing which can better be done and which ought to be done in each locality. It is against the sound policy of the commonwealth to maintain institutions which stand in the way of the development of local high schools.

Now the farmer, unfortunately, is not a contributor to the high school ordinarily. High schools are located in the towns, and accordingly, I suppose, in more cases than otherwise the boy who grows up on the farm lacks the ready facilities for attending a high school, and hence loses a link between his work in school and the University requirements.

Again, our agricultural courses are scientific and extend over four years of time. Farmers' boys are like other people's boys in this, that they want returns for investments; and too many of them are unable to see that it pays to go to a university and spend four years of time in pursuing a scientific course for the returns which are likely to come to them as a result.

I, myself, have some very decided ideas about this. I am willing to say right here that I have a strong impression, which has been gaining strength in my mind since I have been here, and thought much upon this topic, and the circumstances and work which obtain here—I have had a strong idea, which has been gaining ground, that it would be better for the State University to make a special agricultural school of high grade, or high school, rather than a university or college grade, with a view to taking boys directly from the farm and giving them two or three years of practical work and not a university degree, but a certificate or diploma at the end of the course to show just what they have done.

It seems to me that it is of the highest importance, to make a closer and stronger connection between the University and the farmers of the commonwealth than has yet been done. Some of the states have undertaken this, I may say, and with considerable apparent success.

We are striving to develop the agricultural work of this institution. During Prof. Davenport's term here, I am justified in saying everything has been done possible, with the means at our disposal, to develop work in agricultural matters, in the treatment of the soil, in horticulture, in the animal industries, and in all the subjects which relate to and are generally classified under the general name of agriculture.

If you will go to the barns, I am sure you will be shown some animals which you will be very glad to see. And if you will go out to the experimental farms on the ridge at the south, I am very sure you will be interested in some experiments that have been in progress touching agricultural products. Yet I do not pretend, and Prof. Davenport will not pretend, that we have come anywhere near getting to the point we have in mind relating to the treatment of the soil and the propagation of agricultural products and animal life, which are so important to the farming interests of a State like Illinois.

A university, however, must undertake to supply every class of people who can come prepared for it, for every line of learning they may desire.

Now, that is an ambitious undertaking. It is an ambitious plan, but it is one that these State Universities aspire to. As Mr. Cornell put it when he gave his hundreds of thousands of dollars to establish Cornell University, it is upon the same plan exactly as this State University and all the other State Universities in the west—it is the business of the State University to furnish instruction to anybody in any line of scientific research and investigation. Now that is an ambitious undertaking. Upon first thought a man in practical life would say that can not be done. Well, it is very nearly done here, and it can be done, and such a State as Illinois can do anything that is right, and that ought to be done. (Applause.)

It is idle to say that it ought not to do it. More young men in years past—and it is rather a sad reflection, but it is true—have gone out of this State to get their advanced education, than have come into the State in order to get it. Now, that is a sad reflection. It means something. It is very suggestive. It certainly means that the opportunities for advanced learning in this State have not been equal to those out of the State. The people are not fools; they discriminate closely, and they are going to send their boys and girls where they can get the best training. You may just as well face the fact, and stand up to the music, and see what this institution is. I say that it is indeed a sad thing for the great commonwealth of Illinois to permit its boys, and especially its girls, to be trained up under the fostering care of any other commonwealth than its own. We may say what we will, you send a boy out of your state and educate him, and while you may be justified for the sake of securing for him the best education which he can get, it is certain to follow that his feelings, sympathies, and his attachments with the commonwealth in which his home and people and institutions exist, will be lessened because of his education beyond its borders. And if there is anything that is sound policy, it is for the State to educate its children in such a way that it will strengthen, rather than lessen their attachments for that State. The outcome of all that is, that it is incumbent upon us—upon a State which stands unrivalled in the great west, and which promises to be unrivalled in the whole country, to make a State University that shall stand a little higher than any other educational institution between the two oceans. (Applause.)

It requires a great deal of effort and a great deal of money to do that. It requires a great deal of loyalty and a great deal of persistence. It makes a great deal of difference which end of the telescope you look into with the appearance of things.

It is a great long, laborious and costly undertaking to develop a great state university. It depends upon harmony in its councils; upon loyalty in its alumni; upon sympathy and support from the great mass of people who become its constituents. All these things must coöperate. If there is dis-

cord and lack of harmony in the board of trustees, or in the faculty, or between the faculty and the board of trustees; if there is insubordination in the school, or lack of leadership or confidence, or lack of hearty sympathy, confidence and support on the part of everybody who ought to help, of course it is almost a hopeless task. But if there is fraternity of feeling, sense and good judgment in the faculty and board of trustees, and if they do work in accord, and if there is a feeling in the student body that the management of the institution is in close and hearty sympathy with them, and that it is going to do all it can for them in right lines, but going to control them if they move in wrong lines; if there is a common feeling that everybody in the State understands this problem, and intend to help work it out, there will be no doubt of its success.

I am afraid I am talking too long and do not want to impose upon your good nature, and I have continued this long because of the license granted me by the chairman of this meeting.

President Draper referred to the various buildings in detail, and invited those attending the Institute to be present Thursday morning, at 8 o'clock at the Drill Hall, for the purpose of making a tour of inspection of the buildings. At the conclusion of President Draper's words of welcome, Miss Forbes, of Urbana, Ill., favored the audience with a violin solo, and response to an encore.

President Moore called upon Senator Dean, of Adams county, for a few words.

Senator Dean responded by assuring President Draper that the farmers and mechanics and merchants were all interested in the advancement of the educational interests of the State equally, and that they would heartily support any measure that would increase the usefulness and benefits of the State University.

Hon. Oliver Wilson, of Magnolia, Ill., responded to the address of welcome as follows:

Mr. President, Ladies and Gentlemen:—It is somewhat embarrassing to respond to an address of welcome which unfortunately I did not hear. The farmers have not any very great control over railroads. We have had a series of misconnections from start to finish. Even the electric railway company had to bring ropes and ladders on our way out here with which to fix the trolleys. These incidents have been the cause of my delay.

I only desire, in behalf of the president and in behalf of the directors of institutes in the State of Illinois, and of each farmer of the State, to respond to the address of welcome given by the great University of Illinois.

We, the agricultural people, think there is a close bond of fellowship existing between us and this great university. We believe we are working on the same line and for the same object, and it seems pre-eminently fit that this gathering of farmers should assemble here. This is also a school for those of advanced age. We can come here and learn of those things which in our boyhood and girlhood days we were unable to learn by reason of a lack of provision for it on the part of the State. We are here as representative farmers from the north, south, east and west, and also from the central portion of this great State, where agriculture is the basis of all wealth. And we are

HON. O. WILSON.

fast learning that if we would make a success of agriculture, if we would make our farms even self-supporting we must apply to them those principles that are applied in all other lines of business—we must learn to systematize our work, and we must educate ourselves upon the farm. We must try to understand and teach our boys the science of agriculture. We are making advances in education. Never before in the history of organized work in Illinois have the Institutes in the various counties been so well attended as during the present season. I believe the present system of Institute work is advancing, and I believe that this meeting will mark a great epoch in Farmers Institute work in this State. We are only at the beginning. The foundation has only been laid, but I believe the foundation is firm, I believe it is capable of holding and supporting a great structure. I believe the farmers of this State are in earnest about this work. It is unnecessary to talk long, but simply to say we fully appreciate the cordial welcome we have received at the hands of the people of the twin cities. We desire this may be a meeting of mutual benefit. We desire that our people shall not only meet the faculty of this university, but we desire them to meet the students that are gathered here. We believe it is right for the people of this State to know exactly what this institution of learning is doing. There is no better way for us to find that out than to mingle in the class work, if possible, in the school rooms or wherever we may meet those here assembled. I am satisfied if we do this, if we come to understand the work that is going on here we will go home and see to it that our immediate vicinities are represented here to a greater extent than ever before.

And now ladies and gentlemen of the citizens of Urbana and Champaign, to the mayors and all who have so cordially assisted in making this meeting a success, I extend to you that cordial feeling of brotherhood to which your efforts are entitled.

Vice President J. H. Coolidge, of Galesburg, Ill., by request of President Moore, assumed the chair, and President Moore delivered the following address:

Mr. Chairman, Ladies and Gentlemen—It is a great pleasure for me to appear before the Farmers' Institute workers of this State, and in a measure give an account of the stewardship of the Illinois Farmers' Institute. The

directors of this organization, March 10, 1897, elected me president of the Illinois Farmer's Institute, and since assuming the great responsibilities of the office it has been my purpose to impartially and to the best of my ability carry out to the fullest extent the word and spirit of the law, which provides that this organization shall "assist and encourage useful education among farmers and for developing the agricultural resources of the State." It is well known to all present that the act creating the Illinois Farmers' Institute was approved June 24, 1895, and became operative July 1, 1895. This organization for two years rendered the Farmers' Institute cause of the State excellent service without State aid and at a great personal outlay of time and money, that was most cheerfully contributed by its officers and members.

Immediately after assuming the duties of office in March, 1897, the directors entered upon a vigorous canvass for appropriation necessary to defray the expenses of this (r-

ganization, and after months of untiring labor, with the able assistance of the many friends of the Farmers' Institute work throughout the State, succeeded in obtaining the first aid from the General Assembly by the passage of the appropriation bill, which was approved by Governor Tanner and became a law June 5, 1897.

The board of directors, soon after July 1, 1897, when the appropriation became available, assembled and considered plans for actively prosecuting the work contemplated by the act of the General Assembly creating the Illinois Farmers' Institute.

This organization, it will be seen, has had funds available for its work only during the last six months of 1897. The number of County Institutes organized, the number of meetings assisted by its directors, during the past six months, is well known to many present. The disinterested and patriotic service rendered by the directors of the Illinois Farmers' Institute and friends of this work, without compensation, will furnish data for the brightest page in the history of agricultural education in Illinois.

It takes time, patience and deliberation to adjust and put into successful operation a new piece of machinery, and the best results can not be expected from the operation of the act creating the Illinois Farmers' Institute, without experience.

There has been no lack of enthusiasm in the general effort that has been put forth during the past year by the officers of the State and various county organizations to place the Farmers' Institute work in Illinois upon the highest plane of usefulness and, in reviewing the results, there is abundant cause for congratulating all interested.

The data contained in the announcement of the third annual meeting of the Illinois Farmers' Institute (copies of which you hold in your hands) will give an outline of the vast amount of good work accomplished in 1897.

It will be seen that new Institutes have been organized in many counties and meetings held during the current Institute season in nearly all the counties in the State.

It will be seen that speakers have been provided for County Institutes on all topics of interest to farmers, horticulturists, dairymen, breeders of live stock and the general farmer, as well as to parties engaged in special lines of rural husbandry.

The gentlemen composing the committee on the program for this meeting have prepared a feast for all in attendance seldom equaled and never surpassed.

The annual report, containing the proceedings of the business meetings of the directors of the Illinois Farmers' Institute and the papers presented at the last annual meeting, may be had by calling upon our secretary at the close of this meeting.

The annual report for 1897, like its predecessor, contains up-to-date information on all matters pertaining to the farm life and will be highly prized by all interested in the study of Illinois agriculture.

There is much yet to be done to systematize the Farmers' Institute work in this State and your attention will be called to the importance of arranging dates of County Institutes so as to enable desirable speakers to attend a continuous and convenient circuit of meetings at nominal expense.

It is hoped that the reports that will be presented at this session by the directors of the State Institute and the representatives of County Institutes will throw much light on the preparation of programmes, the advertising of meetings, securing the attendance of the boys and girls, the holding of successful exhibits in connection with Institutes, the raising of funds for Institute expenses and new features that have added interest to recent meetings.

This Institute will give many in attendance their first opportunity for intimate acquaintance with the State Agricultural College, which will bear the closest inspection. The excellent work, characteristic of the University of

Illinois, and especially the practical instruction given in the studies pertaining to farm life, can but favorably impress all interested in the general diffusion of information concerning the advanced methods of farming.

The citizens of Champaign and Urbana and the faculty of the University of Illinois have spared no effort to make this meeting of the Illinois Farmers' Institute of the greatest possible benefit to the agriculturists of the State and it is greatly hoped that good fellowship may prevail and the meeting be long held in pleasant remembrance.

President Moore resumed the chair.

The President:—The next order of business on the programme is the report of the Superintendent of Institutes, Mr. Oliver Wilson.

Mr. Wilson addressed the institute as follows:

Mr. President, Ladies and Gentlemen: In presenting the first report of the superintendent of institutes in Illinois I desire to give a short history of the work; it must not be expected that this report will give a full account of the institute held. The superintendent was elected last August and immediately went to work to prepare a list of subjects and to arrange with persons to present them at the various county institutes. This was considerable of a task, to find those who were satisfied, would address institutes in a live, practical and up to date manner. We succeeded in securing about one hundred, all of whom we were satisfied would be satisfactory, and so far as we have learned the speakers chosen have given almost universal satisfaction. With but a very few exceptions these speakers agreed to attend institutes for their actual expenses. We secured but two outside of our State, and it is a fact that the institute work is fast developing many of our young people who should be encouraged to take the lecture field in the very near future. The University of Illinois furnished a strong corps of speakers and much credit should be given them for making the institutes a success.

We also made the attempt to systematize the institute work so that speakers could attend several meetings with but little more expense than it cost to attend one, but we succeeded in this to a very limited extent. But the institutes so far as reported have been of unusual interest, a better attendance than in former years, and I believe with the past experience, the directors will so formulate a plan of action that will secure the holding of an institute in each county in the State during the coming year. And I am fully convinced the best interests of the State demands that we divide the State in three institute divisions, namely, northern, central and southern, and by the co-operation with directors and the management of the county institutes, this may easily be arranged. But even under the present arrangement there will be held during the institute year about one hundred county institutes, there having already been eighty-six institutes held.

To enable county institutes to prepare better programs, the board of directors agreed to furnish at least one speaker to each county if called for, this speaker to be paid out of the funds appropriated for the use of the State institute. Many counties have thus availed themselves of the opportunity to secure more speakers than formerly.

The farmers' institutes are rapidly growing in favor with all classes, as they are proving to be educators not only for the farmer but to the professional man as well, and they should be made of special interest to the young people. This can only be done by giving them some work to do in the meetings.

It may be true that amendments are needed to our system to make it the success that it should be in our great agricultural State, but I am fully convinced that we are working on the best plan taken as a whole, of any of the States, and earnestly hope that every one will endeavor to do what they can to advance the great cause in which we are engaged, that of uplifting agriculture; and while differences of opinion must necessarily exist, let us remember that differences of opinion is no crime, and let us learn well the motto: "In essentials unity, in nonessentials liberty, in all things charity."

OLIVER WILSON,
Superintendent of Institutes.

The President: The next thing on the programme is the report of the condition of the Farmers' Institute work in the several districts by the directors representing the same.

First District.—Mr. Charles F. Dolton, Dolton Station, director of the First Congressional District, furnished the following report:

I think there are many reasons why the Farmers' Institute should be encouraged. First, why should not the farmer, as well as any other class of labor or business men, organize for mutual benefit? What could the blacksmith, mason, engineer, or in fact any branch of labor, do without the farmer? I tell you, gentlemen, we are the foundation. Without the tiller of the soil, none could exist. Then why not organize for improvement in farming and education? The last institution for our State to adopt, but not least, is the Illinois Farmers' Institute. The Legislature of 1895 adopted the Farmers Institute, but made no appropriation. The General Assembly of 1897 appropriated fifteen thousand dollars for the benefit of the Institute for the two years 1897-98.

There is no county in Illinois that should take or be more interested in the agricultural interests of the State than Cook county.

It is to the agricultural and manufacturing industries that Cook county and the great city of Chicago must look for business to ensure its success in the future.

CHARLES H. DOLTON.

Eighth District.—Mr. Amos F. Moore, Polo, Ill., director of the Eighth district, furnished the following report:

It is a great pleasure to make a report of the condition of the Institute work of the several counties in my district. There has been a good Farmers' Institute held the past year in every county in the district. The meetings have been largely attended. The programmes have been carefully prepared and the speakers secured at home and from a distance, have ably presented nearly every up-to-date topic of interest to the progressive farmers of the district I have the honor to represent.

The farmers and their wives and children of the Eighth district are generally interested in Farmers' Institute meetings and the only serious drawback to this good work is the lack of audience rooms large enough to accommodate the crowds that want to attend the County Institute meetings.

Eleventh District.—Mr. G. A. Wilmarth, Seneca, Ill., director of the Eleventh district, presented the following report:

Mr. President, Ladies and Gentlemen of the Illinois Farmers' Institute:—It affords me great pleasure to be able to report all the counties within the Eleventh Congressional District duly organized with Farmers' Institutes in working order in each, viz.: Bureau, LaSalle, Livingston and Woodford. Institutes have been held in each county in this district during the present winter.

I have attended each County Institute held in this Congressional district and found the Farmers' Institute work to be in a prosperous condition and the agricultural outlook encouraging.

The County Institutes in this district are managed by successful and progressive farmers, who are deeply interested in the advancement and general adoption of the best methods of agriculture.

The meetings were all well attended and with good programs, full of interest, drew in every case large audiences that seemed well entertained.

The LaSalle County Institute more than met the anticipation of its warmest friends, both in attendance and interest. The average daily attendance being about two thousand

G. A. WILMARTH.

and at each evening session several hundred were unable to gain admittance.

Believing that the high character of the papers read at the Institute held in this district will continue and the best expectations of the friends of this work be fully attained and realized, this report is respectfully submitted.

Seventeenth District.—Mr. Charles F. Mills, Springfield, Ill., director of the Seventeenth District, presented the following report:

Mr. President, Ladies and Gentlemen:—The County Farmers' Institutes in the Seventeenth District are without exception in excellent condition and meeting the expectations of the progressive farmers that attend the sessions in numbers limited only by the capacity of the largest obtainable halls.

Farmers' Institutes are held annually in each county in the district, and there is no lack of interest in the meetings.

The programs of the County Institutes are carefully prepared and cover a wide range of up to date topics of interest to the progressive farmers and students of agriculture.

The best talent is secured for the institute meetings which are made the principal event of interest each year to the farmer, his wife, and especially the children.

An afternoon session of the County Institute meetings is set apart for the discussion of topics of interest to the farmer's wife, and an evening meeting is devoted to the presentation of educational matters in which teachers and the boys and girls take part.

CHARLES F. MILLS.

The exhibition of farm products, pantry stores, etc., is a leading feature of the County Farmers' Institutes held in the Seventeenth Congressional District. The midwinter fairs held in connection with County Farmers' Institute meetings attract the attention and secure the presence of many who might not otherwise be interested in the instructive papers and discussions presented. Some of the County Institutes in this district call conventions of farmers from time to time to discuss business matters of special interest to the farmers of the county, and such conferences serve a valuable purpose as a County Farmers' Congress.

Farmers' Institutes have been held in the counties composing this district the past season as follows:

County.	Place.	Date.
Christian.....	Taylorville	January 19-20, 1898
Logan.....	Lincoln.....	January 20-21, 1898
Macon.....	Decatur	February 2-3, 1898
Menard.....	Petersburg.....	January 18-19, 1898
Sangamon	Pleasant Plains.....	October 15-16-17, 1897.....

Eighteenth District.—Mr. A. A. K. Sawyer, Hillsboro, Ill., director of the Eighteenth District, presented the following report:

Mr. President, Ladies and Gentlemen:—I have the honor to make the following report of the County Farmers' Institute meetings held in my congressional district the past season:

The Montgomery County Farmers' Institute was held at Hillsboro, Ill., January 12, 13, 1898. The roads were bad, almost impassable, and many farmers who have attended our meetings in years past came nine and ten miles to town and drove home after the night sessions, and many stayed in town to the two days' meeting. The county court room was filled full, seating and standing. For our next Institute we will be obliged to hold meeting early in season, and in a large tent or pavillion, and try and accommodate all. We hope to make arrangements with our Driving Park and County Fair Association to secure their grounds and combine an exhibit of agricultural products with the Farmers' Institute. There is positively no hall in the county that will begin to hold the people should weather be favorable, and this seems to be our only way to accommodate the many who are shut out. Our audiences have always been such as made the speakers feel that their efforts were appreciated, and Messrs. Forbes, Holden, McIntyre, Wilson, and Fursman left many friends who will long remember the instructive talks they gave, and our home talent is always appreciated and at our service on call. Give us the room and we will get the crowds. Ample room we must have and will have, though we have to go out of doors to get it. The last Institute was a success, as it has been for two years, and our farmers only complain of their being held only once a year.

Bond County held its Farmers' Institute at Sorento, September 16-17, 1897. A small town, but full of workers and surrounded with enterprising farmers. Each session was a success, and each day the crowds on the grounds were larger. The exhibits of farm products, fruits, etc., were fully as large as often seen at county fairs. The corn exhibit surprised even Hon. E. S. Fursman, and while the stock show was not large, it made up in quality what it lacked in numbers. No cash premiums were offered, and the prizes consisted of blue and red ribbons. The enterprise shown by the farmers of Bond County in the display made, prove them up-to-date and wide-awake to the advantages to be derived from an up-to-date institute. Everybody endeavored and succeeded in making the meeting a success. The grounds were crowded the first day, and the reports sent out made the second a jam. The first day's attendance was fully two thousand, and the second at least double that number.

The large speakers' tent, seating about 1,000, was full to overflowing both days, and the attention given to speakers proves that they came for new

ideas. No hall in this part of the State would have held one-fourth of the audience. Ice water in barrels was on all parts of the grounds, and even the restaurant furnished 50-cent meals for 25 cents. The officers of the Institute were untiring in their efforts, and worked like the success of the Institute depended on their individual efforts. I must not forget to mention that the road to grounds, a half mile from town, as well as the grounds, were thoroughly sprinkled day and night, and there was no dust. If all our towns were as wideawake as the people in the small town of Sorrento, Egypt would be at the top.

The Madison County Farmers' Institute was held October 28, 29 and 30, 1897, at Moro, in a large store room or warehouse, which was so tastily arranged that in stepping in one was forced to think they had borrowed the St. Louis exposition, or at least part of it. Drug stores, boot and shoe stores, groceries and dry goods' houses had fine exhibits, and even an antiquarian would have found an exceedingly interesting exhibit of old antiques. The farmers were not behind, and after a look at the machinery and ladies' departments, the corn, pumpkins, potatoes and all farm products proved that Madison County had both the soil and the tillers of the soil, and was right at the head. With so many fine exhibits it would be wrong to make special mention, or to individualize in any way.

A large hall was secured for the afternoon and evening speaking, and its capacity was tested to the fullest extent, so many not being able to get in the hall that the crowded fair hardly felt the absence of 600 or 700 in hall. Wood River Grange had charge of the fair, and each member had the good of their order at heart and appreciated the advantages of a large gathering, both socially and intellectually.

The speakers had the closest attention, and the home talent made the speakers from a distance feel that they had to talk to a critical audience, and wonder if they were only sent to for a change. With 3,000 the first day, and nearly double the second, the officers of the Madison County Institute and the many workers from town and country, may truly feel that their efforts were appreciated, and the city that gets it this year will have to work hard to equal it.

Bethalto is a small town near the place of meeting, but all the citizens kept open house, and strangers wishing to stay over night were accommodated free of expense, and the announcement was made at each meeting that everybody was welcome, and all enjoyed themselves.

If I were asked what indicates a full appreciation by those interested in the Farmers' Institute and gives hope for future success of such meetings, my reply would be a brief history of the Montgomery County Institute. The first year at this place only old folks attended; the last year full half the audiences were composed of young men and farmers' boys. It was the same at Bethalto and at Belleville, and full half the inquiries for information were from the young farmers. I had the pleasure to distribute several agricultural papers at the County Institute meetings, and they were wanted by the younger class of agriculturists.

Fayette, Moultrie and Shelby counties, the other counties in this district, have recently been organized, and with the glowing accounts from all over the State of Farmers' Institute meetings, will be ready to fall in line for meetings the coming season.

Nineteenth District.—Mr. D. H. Shank, Paris, Ill., director of the Nineteenth district, presented the following report:

Mr. President, Ladies and Gentlemen:—The counties composing the Nineteenth district are Clark, Coles, Crawford, Cumberland, Edgar, Jasper, Effingham, Lawrence and Richland. In our district we have a great diversity of soils and agriculture occupations. The northern part of the district is given to the cultivation of broom corn, Indian corn, wheat, oats and other grains; whilst the southern part is given to the cultivation of apples, peaches and small fruits. We have good opportunities for agriculture and horticulture; our people are progressive and our schools are among the best. An earnest effort has been made to organize an Institute in each county in the Nineteenth district, and I am glad to report that we have succeeded in organizing an Institute in each county in our district. In some counties the attendance was not so large as it should have been, but the weather and bad roads had much to do to retard the attendance. A strong interest was shown at each meeting and no doubt seed has been sown that will bring forth fruit in due season. Edgar county deserves special praise for the interest taken in the work. The attendance this year was more than four hundred and all unite in saying that great good was accomplished. I find one of the great needs of a successful institute is in having a president and secretary who will work up an interest by their influence among the farmers, showing them the benefits from such meetings. Our work in the district is prosperous and no doubt will continue to grow.

D. H. SHANK.

Twentieth District.—Mr. L. N. Beal, Mt. Vernon, Ill., director of the Twentieth district, presented the following report:

Mr. President, Ladies and Gentlemen:—County Farmers Institutes have or will be held in this district this institute season as follows:

County.	Place.	Date.
Clay	Flora	Feb. 16, 17, 1898
Edwards	Albion	Dec. 1, 2, 1897
Franklin	Benton	Mar. 17, 18, 1898
Gallatin	Ridgeway	Dec. 15, 16, 1897
Hamilton	McLeansboro	Mar. 4, 5, 1898
Hardin	Elizabethtown	Mar. 1898
Jefferson	Mt. Vernon	Oct. 12, 13, 14, 1897
Wabash	Mt. Carmel	Oct. 23, 24, 1897
Wayne	Jeffersonville	Jan. 21, 22, 1898
White	Carmi	Mar. 2, 3, 1898

All the meetings have been well attended and much interest has been manifested by all in attendance.

This district is the largest in the State, being composed of ten counties, extending from the Illinois Central Railroad on the west, to the Wabash and Ohio River on the east, a distance of over 100 miles. To reach my farthest county necessitates travel of over 100 miles, part of the way by boat or stage, as it can not be reached by railroad. To show the work done in this district will state that I have spent 28 days of my time attending institutes and have four counties yet to hold Institutes this spring.

The necessity of systematizing the dates for holding county institutes is apparent to us all. At least two counties in each district should hold institutes the same week, so that a speaker from a distance can attend both, thereby saving both time and expense. We hope by another year to have a better arrangement with the several counties as regards the dates for holding the institutes and securing speakers for the same. The directors who give their time to this work ought to have authority in setting dates for county institutes in

L. N. BEAL.

their districts. Until they have this power it will be hard to arrange a system of dates as they should be, especially in districts of from seven to ten counties, some of which can not be reached by railroad.

Progress and a growing interest in the Farmers Institute work were verbally reported by the following directors: C. J. Linderman, 7th district; J. H. Cooledge, 10th district; G. W. Dean, 15th district; A. P. Grout, 17th district, in their respective districts.

The hour for adjournment having arrived, the Institute took a recess until 1:30 o'clock p. m.

TUESDAY, FEBRUARY 22, 1898.

AFTERNOON SESSION, 1:30 P. M.

The convention met at 1:30 p. m., pursuant to adjournment. In the absence of Hon. H. H. Harris, of Champaign, Illinois, who was to act as chairman of the meeting, Hon. E. E. Chester, of Champaign, was selected to act as chairman.

The chairman: It is a pleasure to introduce Hon. H. M. Dunlap, who will address the Institute on the topic, "Our Horticultural Interests."

Senator H. M. Dunlap, President of the State Horticultural Society, addressed the convention as follows, on the subject,

OUR HORTICULTURAL INTERESTS.

Mr. President, Ladies and Gentlemen of the Institute:—I suppose it is not exactly the right thing to apologize to the State Farmers' Institute by saying that I have no paper prepared. I can not say that I am not enough interested in the subject to prepare a paper, but I have been short of time. What I have to say will be briefly upon the condition of horticultural affairs in this State. I think the extent and value of horticulture in Illinois is not fully comprehended by many citizens, and especially the farmers of the State, and still more especially by that class of farmers engaged in stock raising or in the growing of grain for market.

I will speak for a moment upon the commercial side of horticulture in this State. If I were to tell you that in the southern half of this State the apple orchards were measured by the hundreds of acres, and by the thousands of acres in a number of counties there, you might perhaps gather some slight meaning of what that means.

Mr. Beal, who is present, I think, at this Institute, in describing the horticultural conditions in different counties he visited, stated that from one single point in a township that he had in mind, there were over twenty-five hundred acres of apple orchards.

H. M. DUNLAP.

That is quite considerable to be within a radius of a few miles.

These orchards in the southern half of Illinois, when they come into bearing, as some of them are coming into bearing now, will load a great many trains of cars for the markets of the world. They will not stop at the markets of Illinois, but they will be taken to the markets of Europe. The big red apples of Illinois will have a reputation world wide. The last season was such that people have come from all over the United States to visit and inspect the apple orchards of Illinois, with the view of buying the products of those orchards. And the farmers of this State who are fortunate to have apple orchards, have realized very nice profits from that source. I know one gentleman who has a ten acre orchard, where the trees are two rods apart, or forty trees to the acre, and he realized a net profit out of that orchard of \$2,850.00.

That same gentleman, four years ago, sold from that same orchard \$3,600.00 worth of apples, and at the same time sold enough to the evaporator company to pay all expenses of harvesting the crop.

Now, that is an exceptional case, it is true, but the apple orchards are certain to be in the near future a matter of great commercial importance to the people of this State. One gentleman living in Cumberland county told me that the money derived from the apple orchards of Cumberland county was greater in amount than that derived from the corn crop during the past season, and that, too, when there was not a hundredth part of the area devoted to orchards that there is to the grain crops. So much for the commercial importance of horticulture.

To illustrate that a little more fully, I might say from one single station in Illinois during the last season there were shipped 630 cars of vegetables and fruits; 443 of those car loads were vegetables, and of those vegetables 348 car loads were tomatoes, melons, cucumbers and beans. There were 187 cars of fruit, 22 car loads of apples, 32 car loads of peaches, 80 car loads of strawberries, 50 car loads of other small fruits and 50 car loads of sweet potatoes. In addition to that there were some 40 car loads of pie plant, spinach and asparagus. That was from a place where they do not devote much attention to horticulture, as you will see by the figures—only 22 car loads of apples were shipped and 630 carloads of vegetables.

There are other stations in the State where this record has been duplicated, and I take it this is not generally understood by the average farmer. I only speak of it as showing the possibilities of horticulture in this State and its present condition.

Our work is not so much to encourage commercial orcharding. That will take care of itself. What we ought to devote ourselves to in Farmers' Institute work is to encourage every farmer in this State, who owns a farm, whether he occupies it or it is occupied by a tenant under a lease, to plant fruit upon that farm, and see to it that it has a part of everything in that line for family use. There, I think, is where Farmers' Institutes should take the lead—they should interest every farmer in the growing of fruit upon the farm for his own use. We have a great deal of pork, and we do not need to encourage the production of pork for table use. We have plenty of that; in fact, we have too much of it. When you have pork and strawberries for table use, you want to have them on different days.

On the question of growing fruits upon the farm, I do not propose to go into the details of this at all. I simply want to cite you to a few essential things in the cultivation of fruits.

SELECTION OF VARIETIES.

First of all is the selection of varieties adapted to the location in which you are situated, and to the climate and to the soil.

If you have selected your varieties carefully—those that do well in your locality, that are hardy and productive, you are on the right road to success. I do not propose to discuss varieties, but I am simply saying that is an essential thing for you to consider.

What would you think of a man growing fruits in Northern Illinois who would indiscriminately select fruit only adapted to Southern Illinois?

When the average man undertakes to set out a fruit plantation, what does he do? Why he probably does not think about it very much until the festive tree agent comes along, whom he allows to influence his choice. Of course the tree agent is a wholly unbiased individual! He has no ax to grind at all! And he would undoubtedly select the varieties that he would consider adapted to the soil and climate, and not those that would bring him the best profit or remuneration when he sold them! Neither would he attempt to work off on you such varieties as he may have in stock! So, of course, if you have no better authority at all, I suppose you would have to take the tree agent. But I believe in these Farmers' Institutes we can draw out in our discussions and in our papers the varieties that are best adapted to our localities, and we can plant those without running off after something that is new and strange and valuable, and so much better than our neighbor's have. Let us tie to those things that have been tried and tested and found satisfactory. So much for varieties.

Now there is one other thing that goes with the selection of varieties that is fully as important, and that is, good, thorough

CULTIVATION.

Now take fruit trees, for instance. We all think when the spring sunshine comes that the tree is all ready to send forth blossoms, and if the atmosphere or weather is suitable, why, it will bear a crop of fruit.

Now a fruit grower knows that the fruit buds are not developed during the winter season, nor neither are they developed during the spring; but they are developed the season before, and if you are going to have fruit the coming year you must have prepared the foundation for it the past year, and the essentials for the development of fruit buds are good cultivation. If you have good cultivation you get good foliage; if you have good foliage, at the base of every healthy leaf you will have a bud, and if the conditions are right there will be stored up sufficient elements to cause that bud to develop into a blossom in the spring, and under proper conditions there will be sufficient plant food to develop those buds into fruit, and create an adhesion to the tree so strong that a northeast wind or cold rain will not destroy its vitality to such an extent that it will drop from the tree.

When I see a tree along in August or September with foliage that is diseased, with a leaf surface that is small, the tree stripped of all healthy foliage, I am as certain as I am that the sun will shine when the clouds clear away that the man who has that tree on his place will not realize any fruit from it the coming season, because the conditions are such that it can not develop the fruit buds necessary to bloom the coming spring. I have noticed sometimes during the past seasons that we have had in the month of May a storm from the northwest of forty-eight hours' duration, when the temperature was very low, and the young and tender leaves on that side of the tree would be so bruised that it either dropped from the tree or would become diseased; and those trees would not have any fruit buds upon them the next year, and there would be no fruit on that side of the tree. It has the same effect as lack of cultivation. But if you have your fruit trees well cultivated you may be almost certain to have a crop of fruit every season instead of every other season. Along with cultivation comes

FERTILIZATION.

And it is a very essential thing to bearing orchards, especially, to have your ground well fertilized. If you have good soil and good cultivation and then you put with it the necessary fertilization and keep up the plant growth that is necessary to the health of the tree, you will have a crop of fruit every year unless the spring frosts are too severe upon the buds. There is no reason why an orchard should not bear every year with good, careful cultivation.

I know in my own orchard last year I had very little fruit, and I attributed it very largely to the fact that my orchard being sown in clover the year before received no cultivation particularly, and the season being dry the fruit buds were not perfected to such a degree that they were strong enough to resist the cold rains of this spring a year ago. But the two seasons before that, when the orchard received good cultivation all through the season, I had a good big crop of fruit each year. That is something very unusual. And I know by the reports that have been made by the *ad interim* committees of the State Horticultural Society that where the orchards have received good cultivation they have had a good crop of fruit each year.

INSECT, OR FUNGUS DISEASES OF PLANTS.

Now there is one other thing that the fruit grower ought to observe. I am speaking now generally, without going into details. He ought to know something about the insect and fungus diseases of plants. So far as the insects are concerned and so far as the fungi are concerned they both need a careful

study. The fruit grower should follow carefully prepared directions. The work has to be done at essential, fixed periods in the growth of the plant. It must be done under certain prescribed rules and conditions.

Now that I have spoken of those four essentials, selecting varieties, cultivation, fertilization and insect or fungus diseases that need to be given careful attention in the growing of fruit, I want to speak for a moment about

THE WORK OF THE STATE HORTICULTURAL SOCIETY.

It is the province of this society to take up all the different things that interest fruit growers and horticulturists of this State, and more particularly the amateur fruit grower, or the man who grows fruit for his own home use.

Papers are read and discussions are had at our annual meetings in the three districts of the State, and in the State meetings. Those proceedings are printed in a volume of some 500 pages, and fifty copies of those reports have been sent to the secretaries of County Farmers' Institutes for distribution among those in attendance upon the Institute who are particularly interested in the subject of fruit growing. I do not think there are over twenty societies in this State who have availed themselves of them. I think it is because of lack of knowledge about it that such a thing exists, perhaps, but I want to say that on this subject of varieties, in that book will be found classified for the three districts of the State, a list of varieties that in my opinion, and in the opinion of the members from these different sections, that would be most profitable to plant for a family, and for a commercial orchard, and for small fruits. The subject of insect diseases and fungi is taken up and fully discussed. The services of the State Entomologist have been enlisted in this cause, and the essential parts of his report are included in this report.

I think, Mr. President, I can say that if the secretaries of the County Farmers' Institutes of the State would distribute these reports that they would be doing a great deal to advance the interests of Horticulture in the State of Illinois. As for this Institute I would say that it was expected that the new report would be here for distribution, but it is not yet out of the printer's hands. There are some reports of former years I will have here tomorrow so that they may be distributed among the members of this Institute for their use.

There is nothing further, Mr. President, that I think I need to talk about any more than to try to impress upon the farmers that they are neglecting one of the advantages which they have in life on a farm if they fail to make a good plantation of fruits and vegetables for their own use. A farmer can live better than any one in the city if he will just simply take advantage of the conditions that surround him, and make the best use of them for himself and family. (Applause.)

A. G. Judd, vice-president of the Dairymens' Association, Dixon, Illinois, read the following paper:

The chairman:—The next topic on the program is Our Dairy Interests, by Asa G. Judd, Dixon, Illinois. I will now have the pleasure of introducing Mr. Judd.

OUR DAIRY INTERESTS.

From the way in which this subject, as well as the other topics upon the program, is stated, I take it for granted that a general outline of the dairy interests is desired, and not a detailed system for improving special lines of production.

Having been requested by different parties to touch upon several phases of the dairy question, I will enumerate and try to treat them as briefly as possible.

"The Present and Prospective Commercial importance of the trade in Dairy products"; "The necessity of a State Dairy Commissioner with sufficient assistants and funds to enforce our Dairy Laws;" and "Dairy Legislation," Soiling crops in summer," "Cheapest production of Milk," and "Test-

ing and weeding out Unprofitable Cows." You all realize that any one of these topics is of sufficient importance to occupy the entire thirty minutes allotted me.

Perhaps, by giving you some astounding figures, showing the magnitude of the dairy industry, the solutions of the other topics will present themselves, and I shall need only to suggest a few ideas to set you to thinking and acting along the lines of progress.

I am indebted to some one signing himself "L. W. B." for a condensed statement of dairy values, and to the Hon. D. W. Wilson, of Elgin, for figures concerning the Elgin dairy interests.

It is said that the dairy cow landed with our ancestors on Plymouth rock, and tied behind the old weatherbeaten emigrant wagon she has marched with the household goods of the pioneers who have taken possession of this continent from ocean to ocean. She has increased and multiplied and replenished the earth until today the industries which she has made possible contribute annually to the wealth of the world more money than the great contributions of modern capital. More than lumber and coal, more than cotton and wheat, more than all the looms of New England, more than all the mysterious riches of gold and silver.

Major Alvord says that in classifying the agricultural products of the United States according to value, butchers' meats and meat products take first place; in gross value the corn crop comes next, the hog product third and the dairy products fourth. But large parts of the corn, oats and hay crops directly contribute to the dairy and appear in the market only as transformed into dairy products. Making proper allowance on this account it is found that the products of the dairy hold the second place on the list, exceeded only by meats.

This annual value of what may be called our dairy crop, approximates \$500,000,000. The total expenditures of the U. S. Government for the year 1896 were \$352,386,811, so that the dairy products would have met these expenditures and laid by a surplus of \$150,000,000!

The iron and steel products of the United States for the same year were valued at \$105,000,000, the gold at \$46,500,000, the silver at \$72,000,000, copper \$37,000,000, lead \$11,000,000, the zinc \$5,000,000; and all the metallic product combined at \$282,000,000! That is something more than one-half the value of the dairy product for the same year!

The coal mined in the United States in 1896 was worth \$196,000,000, the petroleum product \$57,000,000, the natural gas \$13,000,000, the building stone \$34,000,000, the entire clay products \$65,000,000, cement \$3,000,000. The entire non-metallic production was valued at \$339,000,000, which fell more than \$150,000,000 short of the dairy product for the same year.

Major Alvord holds that the dairy product of the country is about one-fifth of the total farm products, which is valued at \$2,500,000 a year, or \$500,000, for the dairy products. Taking the same ratio for values, the total value of the dairy interests of the United States would be \$3,240,000, or one-fifth of \$16,000,000,000 set down for the total farm investment.

Comptroller Eckels, in his annual report, states that "on October 6, 1896, the total resources of the 3,676 banks was about \$3,263,000,000, of which \$1,893,000,000 represented their loans and discounts, and \$362,000,000 money of all kinds in bank."

By this showing the total resources of all the banks was only about \$100,000,000 more than the investment in dairying. The whole amount of money loaned by the banks was only one-half the amount invested in dairying, and all the money of all kinds in all the banks was not enough to buy the dairy product of the year!

Now we will drop from our lofty pinnacle down to facts concerning our own State.

The number of milch cows in this State is about 2,000,000. The value of these at an average of \$30 would be \$60,000,000. The average size of the farms in this State is 127 acres. The number of farms is 240,681. This would

give 9 cows to each farm. If it requires 4 acres of land to support a cow 1 year, it requires 8,000,000 acres to support 2,000,000 cows! If this land is worth \$50 per acre, and most dairy farms are worth even more than that, it represents \$400,000,000 in land. Adding \$60,000,000, the value of the cows, we have an investment of \$460,000,000! If each cow returns an income of \$30, the total income will be \$60,000,000! Think of it! The cows of the State of Illinois adding every 365 days \$60,000,000 to our wealth!

The Elgin Board of Trade has on its membership about 280 manufacturers and dealers in dairy products. The number of creameries represented is about 400. The product of these creameries in butter and cheese last year was, of butter 44,234,020 lbs., and of cheese 9,530,068 lbs. The butter sold for \$9,137,219, the cheese for \$618,843, a grand total of \$9,756,063. The average price of butter for 1897 was 18²/₃ c. per pound. When you take into account the investment in the shape of farm buildings, implements, and other necessary adjuncts in caring for these cattle, and the amount of feed consumed in the shape of grain, hay, corn and other roughage, the dairy industry becomes an exceedingly large one, and if there is any one industry in the State of Illinois that ought to have favorable legislation, it is the dairy.

In 1895 there were 60,000,000 pounds of oleomargarine manufactured in the State of Illinois by about ten packing house companies and a few disreputable creamery men. That displaced the product of 300,000 cows, valued at \$9,000,000, and took employment away from 20,000 farm laborers! And nobody knows how much it depreciated the value of pure butter or how much the filled cheese cost us! We all know that during the period of wholesale manufacture of oleomargarine and filled cheese that prices and reputation of American dairy products went all to pieces, causing a loss of millions upon millions upon millions of dollars to the farmers of this country.

We had passed by the last Legislature and signed by the Governor, a law which makes it a misdemeanor for a manufacturer or dealer to make or sell oleo colored yellow in imitation of butter, and yet the law is being violated, as there is no authority for its enforcement.

What we need and demand now is a dairy commissioner, with enough assistants and an appropriation sufficient to enforce and carry out the laws. A statutory law is of little use unless there is a state authority back of it to enforce it. Laws do not enforce themselves, and individuals can not go to the trouble and expense of both time and money to see that they are enforced.

Iowa, today, stands as the banner state for dairy products. As an indication of the efficiency of the anti-color law relating to the sale of oleomargarine, Dairy and Food Commissioner Boardman, says, in his last report, that there was not a single special United States internal revenue license issued in that state during the year ending June 30th, last. There were 108 of these licenses formerly. That fact proves another thing, which is that when the dealers can not sell the stuff in the yellow color of butter, nobody wants it! How long must we farmers and legislators of Illinois be in learning our lesson? "Cheap Prod. of M."

The successful farmer now-a-days is the man who has solved the problem of largest returns for smallest outlay, and the one great fault with many dairymen is their prodigality of feed and labor. They feed and work along stereotyped lines, failing to recognize the fact that science concerns itself about even the feed of the modest cow.

Corn, oats and bran, each one-third by weight, make an ideal standard ration if you desire to feed ground grain.

Now, the question of profit is affected greatly by the manner in which we make this food combination.

The usual way is to plant corn three and four kernels in a hill, husk it in the fall, put it in the crib. Sow the oats, thresh them and put into the granary. Feeding time comes on. You go to the crib and fill the wagon-box with ear corn, fill a number of sacks with oats, and take the load to the nearest gristmill, which is anywhere from one to five miles. Probably you must wait an hour or more for your turn to unload, and possibly by waiting another

hour or two you may get your grist, or you may have to go home without it and return the next day. You pay Mr. Miller \$1.25 per ton, leave your cobs, and take your chances on a hundred pounds shrinkage. Thus it goes for a few years; then you make a heroic resolve to buy a mill and power of your own and do this grinding yourself. Very well; that is a long step in the right direction.

You buy a mill that costs \$75, and a power costing as much more, and you think that you have solved the problem. But, alas! The cold, stormy weather of winter comes on, and soon presents the disagreeable features of that system; for if you have ever dug a power out of a snow bank, thawed out the oil can with a fire from a bunch of hay, and endured a stiff northeaster for three or four hours, while keeping up motion, you then realized that even this way had some drawbacks also. You see I have been through the whole business and know whereof I speak; for I fed a dairy of 50 cows in just that way for several years, and probably should be doing so yet, had it not been that so many factories came into Dixon and took away my hired help, not even leaving a boy to drive the horses on the power.

So, out of sheer necessity, I got my "thinker" to work and discovered that cows had a grinding mill, power and sheller all their very own, and I commenced to shove in ear corn. By a little further investigation I discovered that they had a husking attachment also, and I put in snapped corn. Well, that tickled me so that I kept on investigating, until I found a whole shredding machine, without any patent on it, capable of doing vast amounts of work without repairs, and I rolled in the corn and stalk both together, and results were very satisfactory.

But I still had to grind the oats, and that did not quite suit me. So I experimented and investigated, until one day I discovered—what do you think?—a whole threshing machine, self-feeder, stacker and all. So, now, I just drop down the sheaf oats in front of the self-feeder, it picks them up and presto, change—milk!

I immediately set to work to study the matter closely, and decided that by proper previous arrangements, I had discovered the means that would enable me to reduce the cost of fuel and labor at least one-half, do away with all machinery, save toll, produce a larger milk yield, enable me to meet the constantly decreasing prices of farm and dairy products, besides increasing the income of the farm one-third, by selling all the hay formerly fed to the cows.

My present method is to plant an acre with corn for each cow, putting as nearly as possible, six kernels in a hill, thus getting nearly double the fodder on an acre. The ears are not so large, and hence more easily eaten by the cow; the stalks are not so large around, and have more leaves, thus making the fodder very nutritious and relishable.

Cut the corn fodder as soon as the ear is matured enough to keep in the crib. The bottom leaves are beginning to turn brown then. Now hustle the cutting. Put in large shocks so as to have as little exposed to the weather as possible. Draw the tops tight and tie with binder twine.

When ready to crib, husk out five or six average shocks and find out how many bushels of corn they yield. Calculate to leave twenty-five bushels to the acre, husk out the balance by working around the shock without untying any of it. Thus you disturb the shock very little, and your husking is done about as soon as your neighbors.

It is necessary to have a small yard well protected by buildings, sheds and high, tight fences to shield the cattle from the cold winds. With warm water to drink, and corn fodder in racks to pick at, the mercury may stand at zero or below and you will not see a humped up or shivering cow in the bunch if turned out regularly from four to six hours every pleasant day.

Build frames or racks to feed in by taking five plank 2x12x16. Put two planks on a side and the other plank makes four pieces for the two ends. Put old posts in the corners to nail to, a fence board in the center to prevent the sides springing apart, and you have a bottomless rack that you can take

hold of and turn over whenever it needs clearing of refuse, thus saving much time and annoyance in cleaning out the old way where stationary racks are used.

Get a couple of low wheels, about sixteen inches in diameter, have a couple of old wagon stubs fitted to them, attach to a good, strong wood axle. take two 4x4x16, lay across the axle a little behind the center, bolt solid. Bolt a cross piece at each end. Put a couple of fence boards on lengthwise to fill the middle. Spike on front ends a couple of 2x6s about two feet long for runners. Attach doubletrees to the front end with a short chain, and in a couple of hours on a stormy day you have rigged up a truck on which you can carry fodder enough for fifty cows, and one man can go to the field, load and fill racks in three-quarters of an hour. Three such racks will hold enough for fifty head. Whenever I have time I fill my barn with fodder to use on stormy days and in the spring.

After milking in the morning I feed bran; after breakfast feed sheaf oats; these are eaten while the man is filling the racks with corn fodder. If the oat straw is free from rust and cured in good condition the cows will eat it as greedily as hay and you will find the oats are thoroughly digested. Allow half an acre of oats for each cow. Cut when the grain is turning and about two-thirds ripe. Be sure the berry is ripe enough to fully mature in the shock, for we want the full benefit of mature oats. Bind in bundles the same as usual; put in shocks and as soon as safe move into barn.

After the oats are eaten up, turn out the cows, clean the stables, fill the mangers with fodder corn for the night. After milking at night feed bran again.

By having shoats to follow the cattle there is no waste whatever. You have saved in a dairy of fifty cows for grinding at least \$125. You will sell at least \$300 worth of hogs, five to seven hundred dollars worth of hay. One man can do the work of caring for the fifty cows and thirty shoats and ten calves. Your corn fodder will not cost you to exceed \$1.50 per ton. You have saved a vast amount of time. You have saved in the cost of the feed—well, let us see:

A BALANCED RATION.

8 lb. Bran, 5 lb. Oats, 26 lb. Corn Fodder.

	P.	C. H.	F.	
8 lb. Bran	1.	3.52	.24 ^u	\$9.00 = .036
5 lb. Oats .....	.37	1.80	.17 ^u	.18c = .027
26 lb. Fodder.....	.70	7.38	.25 ^u	1.60 = .02
<u>39 lb</u>	<u>2.07</u>	<u>12.70</u>	<u>.66</u>	<u>= .083</u>

Comparison of cost of two ways of feeding. Each system containing one-third corn, oats and bran by weight.

Corn.....	60 lbs.	@	20c.	^g +4 +1 = 25c.
Oats.....	60 lbs.	@	18c.	^h = 34 + 4 + 1 = 39c.
Bran	60 lbs.	@	\$9.00	= 27c.
	<u>180 lbs.</u>		<u>Cost</u>	<u>91c.</u>

180 ÷ 10 = 18 cows—grain cost.....	\$0.91
20 lb. hay × 18 = 360 @ \$7.00	= 1.26
	<u>\$2.17</u>

\$2.17 ÷ 18 cows = 12c. per day.

Second way of feeding:

Corn 80 lbs., cob and husk	20c.	^{h.} -3 -4 -1 = 12c.
Oats 80 lbs., 2 bu. grain and straw.....	18c.	^{t.} = 36 -3 -4 -1 = 28c.
Bran 80 lbs. @ \$9.00.....		= 36c.
<u>240 lbs.</u>	<u>Cost.....</u>	<u>\$0.76</u>
240 lbs. ÷ 10 = 24 cows.		
.76 lbs. ÷ 24 = .036 grain cost.		
C. stover = .02		

.056 total cost each cow.

Add $\frac{1}{3}$ more corn and oats and it = .056 + .032 = 8c. grand total.

Miss Slave and Mr. Beardsley favored the audience with a vocal duet and an encore.

The Chairman:—We will now have the pleasure of hearing an address on "Our Poultry Interests," by Hon. L. H. Griffith.

Mr. Griffith read the following paper:

OUR POULTRY INTERESTS.

Mr. President:—I suppose that the most reasonable claim I can make for the privilege of occupying some time in this convention is based on the fact that for a score of years I have devoted myself to the educational interests of farmers' children. Have had very little experience in poultry culture on the farm, except as a matter of observation. I, like Ischabod Crane, the school master of Sleepy Hollow fame, have boarded around with the farmers. From the particular kind of pedagogical work in which I am engaged, my opportunities are very good for acquiring an extended knowledge of the spirit of farm life. I don't do any of the work, but merely enter into the spirit of it.

When corn planting time is on, I am with one farmer and his force at meals and lodging of one day, with another company of workers the next day, and so on till corn planting is done. I become very much interested along with those with whom I associate in quality of seed corn, conditions of the soil, prospects of the weather, market prices of corn, the relative merits of surface cultivation and deep plowing and all those things in which interest centers according to the season. And yet I don't plant any corn. In fact, I don't know whether I can operate a corn planter or a harrow or not, but having made no attempts, I have not failed, and with this clear record and with a multitude of opinions upon these subjects, which I have thought about much and talked about no less, why am I not a most worthy adviser? But in the poultry products I have been even more interested. For when the rains have come and drowned the young chicks my sympathies have been with the good house wife; when the thunders roared and paralyzed the unhatched ones, my tears have flowed with those of the woman who has set the eggs. It would be a heart of stone that would not be moved in the midst of these disasters. And besides, I have a very great personal interest in these same prospective fries and the fresh eggs. I am a consumer of these products—when the opportunity presents.

It is upon the presumption of knowledge acquired thus that I venture to discuss poultry interests from the farmers' standpoint.

All those things which enter into the individuals' continuous life work are the formative elements of that individual's character. So, corn-raising, stock-raising, fruit-raising, etc., are the concrete elements upon which rests the character development of a people in an agricultural country like ours.

In the strongest sense of the word Illinois is an agricultural State. Except in a few localities where mining and manufacturing are carried on, the farmer's interests are the ruling interests, and "corn is king." Corn and its resultant heavy live-stock products, commerce, modes of transportation and all the relations of society in Illinois, even of the territory outside of that known as the corn belt region, are adapted to the corn producing interests, and well may we raise our voices in praise of the wonderful achievements in material affairs in this great State of Illinois.

Observe the evolution, first the single-roomed shants away out on a trackless prairie; next the unpretentious cottage; and now we have reached the third stage in which the handsome dwelling with all modern conveniences prevails.

Land has risen in value, mortgages have been cancelled and we are a prosperous people.

In achieving all this the Illinois farmer has become an intensely practical character. Measuring that which is good in life by the same standard as is used in measuring corn from the crib. Weighing the duties and responsibilities of life on the same sort of scale as that which gives the weight of the fatted steer.

It seems to me that we have now reached a point in our development at which something more is necessary to preserve and forward the glory of agricultural Illinois.

The fertility of the soil must be preserved. The life of the farmer and of his family should be attractive. The nobility of farm life should be held up to the youth. Are you not producing too much corn for the good of the soil? More than is profitable according to demand? More than can be raised and yet keep the farm home attractive, beautiful and comfortable? I would advocate that he who gives all his energy, straining the land he tills to the production of 5,000 bushels of corn per year, should raise less corn, say 4,000 bushels and divide up the labor and expense given to that 1,000 bushels difference to the diversified auxiliaries of farm production such as bee-keeping, fruit-raising and poultry culture.

I deem it unnecessary to quote statistics as regards poultry products in this paper. From agricultural reports and other sources figures are given in abundance proving the mightiness of the hen. And it is well known that Mrs. American hen fails by many thousands of dollars worth of eggs to supply our home markets. We depend much on importation. Then consumption of poultry and eggs may be increased if care is taken to improve the quality. The markets will become steadier when purchasers are more regularly and fully supplied.

It is entirely possible and practicable for the poultryman to so breed and care for his flock that hens will lay through November, December and January. The price of eggs is not so much a drawback in the sight of the consumer as is the fact that fresh eggs can not be had at any price.

I believe farmers will soon grasp this opportunity that now lies open, thereby increasing very satisfactorily the profits of the farm with a small outlay of labor and capital.

Then the supply of poultry for table use is not nearly up to the demand. It is probably true that no great demand exists for old hens and roosters—poultry of inferior quality—but the production of broilers and fries in season is quite short. Hotels and restaurants are many times not able to secure broilers in sufficient quantity and regularity to warrant this popular delicacy in being placed upon the bill of fare. The young chick, well bred and grown, improved in flesh texture, flavor and plumpness of body, may become more popular with high-livers—the rich—and thus command higher prices. In eastern markets, I am informed that the fowl of well-shaped back and breast, symmetrical in all its parts, is sought and commands much higher prices. Uniformity of size, shape, and color of meat in a shipment is highly favored in the best markets. A mongrel flock, of all breeds and crosses and no breed in particular, will not produce these desirable results. Keep standard-bred fowls. As to what breed or variety you choose should depend largely upon whether you market meat bulk or broilers and fries, or eggs, or a combination of any or all these.

If raising poultry for quantity of matured meat, the Asiatic breeds—brahmas, cochins, langshans—may be chosen. If for broilers and fries, the American class—wyandottes, plymouth rocks and javas—are recommended. If the production of eggs alone is the aim, the Mediterranean, Polish, French and Hamburg classes all have excellent records. The breeds of the last-named classes are mostly non-setting and small, developing early, great foragers and flyers, and veritable egg machines, as the expression goes. But for a combination of qualities, developing early, symmetrically, and of good size, the plymouth and the wyandotte, in my opinion, can not be surpassed.

As this paper is intended for farmers—those who are not expected to take up poultry culture as a leading occupation, but rather to make it one of the

auxiliaries, I take it that raising broilers for special marketing or producing eggs alone is not desirable.

Some argue, and I think wholly without reason or definite observation, that cross-breeds, mongrels or even the degenerate dunghill, is more profitable than standard-bred fowls, and try to popularize their arguments by asserting that thoroughbreds possess beauty of plumage and are bred to that end, and therefore lack in qualities of usefulness. This argument is just as valuable as is the assertion that the highly bred Jersey milcher is only good for exhibition, ornament, and that the scrub should be kept for utility.

A flock of chickens mixed—some cochins, some cochin-leghorn cross, some pure game, and some game-hamburg cross, some brahma-hamburg cross—will feed out for market about as successfully as would a herd of steers, some short-horns, some short-horn-Jersey crossed, others standard Jerseys or scrubs. (I have been using the term scrub here to mean that which is untraceable in its lineage and characteristics. Perhaps it may be applied to any inappropriate cross just as well.)

Let your flock of poultry be uniform for the same reason that you seek uniformity in your herd of cattle or swine.

Some breeders of standard varieties have done much to prejudice the public against those varieties by supplying customers with very inferior stock; weak in constitution, diseased and utterly worthless; lacking in all the good qualities of the variety they are intended to represent.

Ignorance in mating stock, injudicious in breeding and poor care will result in failure with the finest fowls or the most worthy animals of any kind.

Do not condemn the variety because some unscrupulous fellow succeeds in getting off some very unrepresentative specimens at good round prices. Try again. But this time be careful of whom you buy.

Right here I recommend what I am quite sure will be considered by some unsound advice. Buy your breeding stock of a poultry fancier. I mean a real live, wide awake chicken crank, one who has been afflicted for some time with what is known as "hen fever" and no amount of either fortune or misfortune is sufficient to drive the disease from his being. I do not mean that sort of fancier who fancies fowls because they can sometimes be advertised widely, and regardless of merit bring fancy prices, but a real lover of the feathered creatures.

The true poultry fancier will lie awake of nights to study out the best possible combination in mating his breeders so as to impress in the strain which he cultivates the predominating good traits possessed by that strain. He observes closely the individual hens that are good layers and breeds from the stock for new breeders. Thus developing a strain of good layers and weeding out the profitless ones. The honest fancier breeds for utility as well as plumage, and I would rather risk his fowls for breeders than those of the poultryman who takes very little interest in his fowls except for the income yielded.

Possibly, at suggestion of the terms "fancier" and "chicken crank" the picture drawn in the imagination of my hearers is that of a chicken yard 8 x 10 feet in dimensions, located in the back yard of some city residence, a rose bush in the center, an organ box at one side serving as a poultry house and a few shades of some fancy variety, smoke colored, vermin bearers, with an interrogation point appearance of manner, each fowl having cost the producers \$4.00 in cash and \$11 in time. Such scenes exist in reality. Do not choose your breeding stock from this source.

But after the breed has been chosen, stock secured and the farmer has fully decided to give to the poultry some well directed thought and labor and to invest a small amount of capital in starting right, a few observations will be in place.

1st. As to shelter and grounds.

2nd. Sanitary conditions.

3rd. Feeding.

In conclusion, I want to sum up the arguments intended in this paper as follows:

That the Illinois farm should be preserved in all its fertility. Products should be varied.

The full line of delicious berries, larger fruits, vegetables, honey, fishes and fowls as well as the heavier products for which our State is now noted.

Then beautify the surroundings and encourage culture, comfort and sympathy within the home.

Make the farm home so sweet that he who leaves it in aspiring young manhood will carry with him the thought that he leaves a home full of love and tender good wishes, and as he pursues his busy way in city or distant land, returning memories will always hold in him a high respect for the place that gave him birth.

Ennoble farm life so that ambitious may see glory in the life of the agriculturist.

“Ill fares the land, to hastening ills a prey,

Where wealth accumulates and men decay.”

We are proud of the past of this magnificent prairie State.

We are proud of her country boys—Lincoln, Grant and Logan.

But if our rural population bestirs itself, holding on to what is already accomplished, our glory is but just begun.

The Chairman—It is a pleasure to introduce Hon. A. J. Stone, Secretary of the Illinois Bee Keepers Association.

Mr. Stone read the following paper on “Our Bee-Keepers’ Interests,” viz.:

OUR BEE-KEEPERS’ INTERESTS.

It matters not what pursuit we wish to enter in life, the first question that confronts us is will it pay?

It is an axiom that no business in this world will pay unless properly managed; and even then the time will come when it will not prove a success financially.

We will take wheat growers, for example, which has not been profitable for a number of years, and yet, in time, many a farmer has paid for his farm out of the profits of wheat growing.

We might say the same of corn, hogs and cattle, and, in fact, all the products of the farm. One of the greatest faults (we might call it) with farmers is their great disposition to rush to the same thing and overcrowd it, like a lot of frightened cattle on a boat—cause it to be sunk by all rushing to one side.

The interests of bee keepers are not so, for the reason that all will say the wild flowers are disappearing, and there are no honey plants for bees to work upon, as there used to be.

And then there are so many who are afraid of them. We have had many to tell us that they want to be let alone by bees; they hurt too badly, and their sting swells so on me and is so painful, —y; they will follow me a mile to get to sting me; and all such talk.

If a person is not brave enough to stand an occasional sting, they had better never engage in bee culture.

The writer, when a boy, was as badly affected by the sting of a bee as any one well could be; and by persistence and a determination not to give it up, he has grown to care less for their stings, and on several occasions is positive that they have cured rheumatism.

With Italian bees, a bee veil and a smoker, the only stings received will be on the hands, and by removing the sting immediately and squeezing out the

poison from the place affected, the pain is soon gone, and little, if any, swelling occurs.

With the many barriers in the way, the interest of the bee keeper is overlooked, to the loss of everybody.

The first objection offered (that wild flowers are disappearing) can easily be overcome.

No sane man ever thinks of keeping any kind of animals without, in some way, providing food for those animals. But when it comes to bees, because they have wings, their owners will say, if you can't go and "sponge" off my neighbor you can starve.

To a certain extent this is all right, but suppose your neighbor has no pasture for your bees, then comes up the original question, "will it pay" to raise some kind of pasture for them? We know it will pay largely.

To illustrate, not long since, in viewing a twenty-acre piece of Alsike clover which we have, we made this statement: Suppose we obtain only fifty pounds of honey per acre and only 10 cents per pound; that would pay for the rent at \$5.00 per acre; then the hay will produce almost as much as red clover, and of a much better quality, and the seed (which is in the first crop) produces more than red clover, and also brings a higher price, and as a forage plant, we know of no other plant that will attract any kind of stock away from it.

While in charge of the Illinois honey exhibit at the World's Fair, we were one day conversing with a man who proved to be a dairyman at Elgin. He said his cows on Alsike clover pasture gave more milk and of a better quality, than did the cows of his neighbor, which were on other pastures.

We, being suspicious that he was a bee keeper or had other interests, began to quiz him thus: "Perhaps you have a better strain of milkers than they?" He answered, "They are the same cows I had previously on other pasture, and they did not produce then as now." Then we asked, "Are you a bee-keeper?" "No; but my neighbor's bees fairly swarm on my pasture." That satisfied us, for although we had raised it, we wanted to hear what others thought of it.

It has no superior as a honey plant, unless it be sweet clover, and its quality (of honey) is as good as white clover. Its growth is like red clover, though it has not as coarse a stem, and for that reason is a better plant to mix with timothy, as it cures as quickly as timothy. It has blossoms resembling white clover, except they have a purple tinge. Its leaf is solid green, while those of red and white clover are sprinkled with white.

In speaking of sweet clover, we desire to say a word in its defense, taking the risk of incurring the ill-will of the commissioners of highways throughout the State.

It has not gotten into our part of the State very extensively as yet, only here and there a patch on the highways; and everybody, on first observing it and hearing what the other fellow has to say of it, seems half frightened out of their senses—imagine they are going to be crowded out of existence by it, because of its early and rapid growth.

One of our neighbors who was thus affected, after he had been told that it was a biennial and was very tender the first year, and did not bear seed until the second year, and then died, root and branch, was seen the next spring digging up plants to take home and set in his yard.

During the World's Fair we received a very fine sample of sweet clover honey from Mr. Miller, of Lee County, eighty-five miles west of Chicago.

We went out to buy it to add to our exhibit, and found that he had 2,300 pounds of comb and two barrels of extracted honey from thirty-five colonies of bees, and all the pasturage they had was sweet clover in the adjacent highways and seven acres he had sown on his farm on land that was too poor for corn, and he said that following sweet clover, he had raised on this kind of land better corn than on his best land.

Why not such a plant as this be allowed to grow on the road side, instead of noxious weeds?

Sweet clover is fast coming into favor as a forage plant, as it is being found out that all kinds of stock learn to like it.

At the meeting of the N. W. B. K. Association in Chicago, some of the bee-keepers reported that stock in the highways where they live, kept it eaten close to the ground. Yet there are some people still living who are like the old deacon who would not support a candidate for an office because he said that he believed that the earth was round, and you couldn't make him believe such stuff, and he wouldn't vote for any man who did.

We would not desire every farmer to be a bee-keeper, nor do we advise the planting of crops especially for honey; but as to the latter, you can draw your own conclusions from what we have said.

As to every farmer being a bee-keeper, it is not practical, for the reason that it would be, in most cases, on so small a scale that it would not pay him to spend much of his time with them, and to be successful they must have the proper care at the right time.

It is a fact that when there is no honey for the bees to gather, they do not need so much time applied to them, but the colonies will run down and be lost by becoming queenless, and from other causes, that need a watchful eye occasionally, and an attentive ear to the sound of robbers, even if there is no honey being stored.

No one who is largely engaged in horticulture can afford to be very far removed from bees without a greater or less loss in the quality of his fruits.

No one who is largely engaged in horticulture can afford to be very far removed from bees without a greater or less loss in the quantity of his fruits in the seasons when bees are the only fertilizing agent to be had.

We remember one year of having a large crop of cherries, and got a good price for them because there were so few on the market, and we could see no reason for it unless it was the bees. The president of the Missouri State Horticultural Society in relating the experience of the large sweet cherry growers along the Pacific coast, said they were growing these cherries in California, and from there they were taken north along the coast. But the trees which were thrifty and healthy would not bear any fruit in the northern locality. On investigation they discovered that the cause was a lack of fertilization. Bees were introduced into those localities and they had no more trouble, the trees producing fine fruit in abundance.

By the mode of procedure we have partially outlined, a good apiary of 75 or 80 colonies could be had to each 3 miles square, or 9 square miles in the State, which would in the 56,000 square miles, give us over 6,000 of apiaries of 75 colonies each, and 450,000 colonies with in ordinary years 50 pounds of honey per colony or 22,500,000 pounds of honey, the purest sweet that the Lord has given to man.

We have not a word to say in the discouragement of sugar beet raising, but how do these figures strike you gentlemen?

Now while all these things are possible, yet the highest we have ever known of as reported to the State Board of Agriculture from the assessors of the State, was in 1889 when 2,128,060 pounds were reported, which brought 14 cents per pound or about \$298,000. It is certainly possible to improve largely on these last figures, if we will provide pasturage for bees as we do for our animals.

Last summer Dr. C. C. Miller, of McHenry county, then president of our State Bee-Keepers' Association, received from 3 apiaries of 80 colonies each, over 17,000 pounds of comb honey, and C. P. Dadant, of Hancock county, from one of his apiaries of 75 colonies obtained 8,000 pounds, and Mr. Green, of Ottawa, from 90 colonies got 12,000 pounds. Think of the possibilities of the State with apiaries evenly distributed over it.

The beginner in bee-keeping must not think he can start the business on the old plan any more than he would think of beginning to farm this spring by going into the field with a hoe to cut corn stalks, or in harvest time with a

cradle or reap hook to cut wheat, and his other work on the same plan, because his forefathers succeeded and did that way. Neither must he listen to the advice of the old timers, who will say: "Talk about bee-keepin', why, bless your life, I have kept bees for 50 years, and I never seen a king bee in my life. You needn't tell me that bees don't gather wax for I have seen it on their legs. And I don't want you to talk to me about bees only livin six weeks for I have a stand of bees that my father gave me 30 years ago." "And you had just as well talk to me about this earth agoing round the sun once in a year, as to think of making me believe that you can cause your bees to take one of the eggs that it would take 20 days to hatch into a worker bee, and change it, as you say, so that in 16 days it will hatch into a queen; nonsense." "And again, you fellows with your new fangled ideas and your book larnin talk about the "ratlin" of tin pans, no good, don't I know? I have saved many a swarm by me and my children rattlin pans and bells." "And you talk about Italian bees keeping all the moths out of the hives. Now you can't make me believe that they are smarter than my old bees, and I use traps to catch the worms, and then I loose a stand every now and then, and I know it is the moth as does the work."

But what a beginner in bee-keeping should do is to get some good book on bee-keeping, such as A B C in Bee Culture, by A. I. Root, of Media, Ohio, or Longroth on the Honey Bee, revised by C. P. Dadant, Hamilton, Ill. And take a good bee paper, as the American Bee Journal, a weekly, published by Geo. W. York & Co., of Chicago, or "Gleanings in Bee Culture," a semi-monthly, by the A. I. Root Co., of Medina, Ohio.

Then with a small number of bee-hives (there are a number of good kinds), with Italian bees in them, in a few years you will have all the bees you desire, and the knowledge needed to care for them. In fact you will have so many you will be ready to fall into line with bee-keepers to get a race of bees of a non-swarving disposition.

We claim for the industry of bee-keeping what can be said of no other. It does not take from any other thing that which would make it more valuable in retaining the same, but on the contrary adds to the value of those things. For example: when bees go into an orchard in full bloom, to gather what nature has placed there to attract them to the blossoms, they carry the fertilizing dust from blossom to blossom, causing fruit to grow where there would be none, without some agent to carry the pollen (as nature seems to abhor self-fertilization) and all that the busy little bee carries off as a reward for his valuable services is not needed, and is of no use in the growth of either fruit or tree, as it was placed there by the God of nature for them to carry away.

The same may be said of all the other fruit or seed-bearing plants.

Red clover was without seed in countries where the bumble-bee did not exist, until it was introduced into those countries, for the reason that other insects could not reach the sweets secreted in the cups of the blossoms, and therefore did not visit them to carry the fertilizing dust.

It would be well to say in this connection that we do not look for seed in the first crop of red clover, but we have observed since having Italian bees, that in seasons that are dry and the blossoms not so large, that the Italian bees work on them sufficiently to cause a quantity of seed in the first crop.

Alsike clover, as we have already said, produces its big crop of seed in the first crop because bees work so well upon it.

Can this be said of any other industry that, by taking a part from these things we have named, the remainder is made greater?

And yet it is so in all cases where our bees visit our own, or our neighbor's blooming orchards or fields. They give back a double value for all they take away.

A bee-keeper friend, living in the northern part of our county, said to us as we were viewing his alfalfa and alsike clover fields: "I am going to get three crops from those fields. From the alfalfa, I will get three crops of hay, and from the alsike, I will get a crop of honey, a crop of hay and one of seed, and any one of the crops will pay the rent of the land."

In view of these facts, we have shown that bee-keeping can be added to any occupation, and cause just that much more to be saved of what is otherwise going to waste, and with no loss, except the time for their care.

As an evidence of this, you only need to look at the membership of our association, composed, as it is, of women, ministers, lawyers, doctors and all other occupations, as well as some who have retired from busy life, engage in it for a pastime.

The masses do not realize the value of honey from a hygienic standpoint, else it would have more than kept pace with sugar as an article of human consumption.

Dr. Vance says: "Honey is a physiological sweet; in other words, its constituents are such that it is absorbed into the blood without undergoing chemical change."

"Such is not the fact in regard to sugar."

"Honey is an inverted sugar, consisting of lavenulose (fruit-sugar) and dextrose (starch-sugar), and readily absorbed into the system, without being acted upon by the gastric juice."

"Therefore, honey is not only a delicious sweet, but is a very healthful and nutritious form of food as well, and aids the natural functions of the alimentary canal."

It is recommended by those who have used it as a refreshing drink, diluted with water in the proportion of from 2 to 5 per cent.

Mr. Teft offers the following:

"Sweeten your tea and coffee with extracted honey, and if you are troubled with the gravel it will cure you. It is a true brain and nerve food and tonic. It improves the appetite, tones the system, and has proven to be of great value in many diseases, producing a contraction of the muscles of the digestive organs and, as an aid to digestion, it is wonderful in building up lost power. It is a cheap remedy for the consumptive, and, in fact, should take the place of sugar in many things."

In view of all the facts and possibilities herein stated, is it wise economy to let the "Bee-Keepers' Interests" lag or stand in the rear of other things not half so beneficial to mankind?

Most assuredly no!

Our bee-keepers' interests should be represented in the State experimental station (for which we have sought so far without avail), and we ought to have our pure food law in this State enforced, as we hope to have. And we wish to give our hearty co-operation to the Pure Food Congress now gathering at the capital of the United States, to begin their action on the 2d of next month.

The Chairman—We will now listen to a paper by Captain Alvin C. Beal, of Mt. Vernon, Ill.

Captain Beal read the following paper on Horticulture in Southern Illinois, viz :

HORTICULTURE IN SOUTHERN ILLINOIS.

(Alvin C. Beal.)

In discussing the subject of Horticulture in Southern Illinois, we will first notice its geographical position. We will find that the forty-one counties which comprise the division embraced in the act creating the Horticultural Society of Southern Illinois, lie between latitude 37 degrees and 39.5 degrees, the latitude of Norfolk, Va., and Baltimore, Md. Isotherm 55 degrees, which gives its true position more exactly, passes through Southern New Jersey and Southern Illinois. This shows that we have about the same mean annual temperature as New Jersey. Along this isotherm are the great fruit growing districts of New Jersey, Illinois and Missouri.

The elevation ranges from 300 feet at Cairo to 800 feet at Cobden, 500 at Centralia and Olney, and 600 feet at Effingham. The soil over the entire region, except where modified by the action of the streams, is an extremely fine white clay. This is the deposit of the first or oldest glacier which, unfortunately was not covered by the more fertile deposit left by the second glacier. The peculiar nature of this soil, with its tendency to give up rapidly its moisture during drought, made it more adapted to wheat than to corn. For many years this section was a great wheat growing region. The competition of the Dakotas and the uncertainty of a crop in recent years, has rendered wheat growing unprofitable. Unable to grow wheat, with corn an uncertain crop, because of drought and the chinch bug, the farmers were compelled to seek other lines. Then it was that the farmers began to turn their attention to fruit growing. Up to this time fruit growing was confined to a few points along the Illinois Central Railroad.

The early settlers of this section were neither a fruit-eating nor a fruit-producing people. Many of them had been born and bred to a pork and hominy diet. They depended on the forests for their supply of fruit. The children gathered strawberries, blackberries, grapes, plums, mulberries, crab apples, persimmons and pawpaws. A few of the more enterprising had peaches. These were seedlings, of course, as the pioneer, as a rule, knew nothing of budding or of varieties. Peaches were peaches with him. As the country developed, some of the farmers began to plant apple sprouts and seedlings. When the chief end of the apple was the cider or vinegar barrel, it made little difference what kind of an apple they had. Some, who had been used to better varieties in their old home, brought grafts with them. The sprouts or seedlings were set out and then grafted. On our farm are some old apple trees which now, after sixty years, still show the point of union of stock and scion. The varieties introduced were: Janet, Milam, Rambo, Horse, Sheepnose, Vandever, Smith's Cider, The Romanities, and the different varieties of Russets. As a general thing, these varieties were unsuited to our soil and climate. Many of them have disappeared, while a few of them are occasionally found in the old orchards. All the orchards of this day were small and only intended to supply the family.

This was the state of horticulture up to the time of the construction of the Illinois Central Railroad. The earliest plantings for the market were peaches. An orchard of 8,000 trees was planted at Makanda in the fall of 1857. Even today this would be considered a large orchard. When we consider that this was before the day of the fruit train—that everything must necessarily be sent by express—we are compelled to admit that it was a big undertaking. Peaches are still a favorite crop with the Makanda fruit growers. Last season they sent seventy-four cars of choice fruit from this station alone.

The first strawberries shipped from Southern Illinois, so far as I can find any record, was one case sent from Ullin station to Chicago, in May, 1860. A gentleman in Centralia says that in 1861 he was sent out one day by his employer to sell twenty-two quarts of choice strawberries. At that time no one else grew them, but the wild berries were plentiful out on the prairie. One-half of the people had never seen cultivated strawberries, and probably 90 per cent. had never tasted any but the little wild berries. The result was, that he failed to sell his twenty-two quarts of berries in Centralia, then a city of 2,000 people. If some of the croakers of this day had been present, they would have said that the business was overdone.

This was before the day of Hallock quart box. The gentleman carried his berries in a pail and measured them out to the consumers with a pint cup.

In that day, Cincinnati was the great strawberry market of the west. The papers boasted that the merchants there were able to dispose of 800 bushels, about two cars, of strawberries per week.

In a few years, Chicago eclipsed Cincinnati as the great fruit market. They probably can dispose of their 30 to 50 cars per day as easily as Cincinnati did two cars a week in 1861.

Centralia, however, made rapid progress in berry growing. In 1867 a sort of an eighth wonder was a vast field of strawberries, ten acres in extent. These were of the old Wilson variety. A few years later, the Crescent was

introduced. With its Yankee push and energy, it revolutionized strawberry growing. Ten acres of berries was a common thing. From ten acres, the fields ranged on up as high as fifty and sixty acres.

The Hallock box and crate were invented, the refrigerator car adopted for the purpose of carrying fruit, the fruit train arranged to run on passenger time, and shipping associations, to guard the growers' interests, were developed.

The gentleman who glutted the Centralia market with twenty-two quarts of berries in 1861, has lived to see almost as many car loads shipped from there in one day as he then had quarts. Not only Centralia, but many other points are engaged in shipping strawberries. The magnitude of the business is shown by the fact that 800 car loads of this fruit were shipped from Southern Illinois this season.

Shortly after the war, people around Cobden went wild over pears. Trees were planted by the thousands. The trees thrived for a few years, when the blight swept through these fine orchards, leaving destruction behind. A few men have kept planting pears with partial success. If the blight-proof pear is ever discovered, Southern Illinois will take the front among pear-growing sections. Even now many of our pears are sold from the fruit stands as California pears. When you get a good eating pear at a fruit stand, just investigate a little and see if it didn't grow in Egypt or down East.

Until about 15 years ago there were few large apple orchards. A few extremely profitable crops in the 80's and in 1890 and 1891 has given such a decided impetus to apple culture that trees were planted by the millions. The acreage is more than 150,000. Those that raised the cry that the business was likely to be overdone a few years ago have so far recovered from their fears that they are going to plant more this spring. In some of the older apple-growing states, the planting of new orchards is not keeping pace with rate of decline in the old ones. The market for apples abroad has been increasing, and no doubt will continue to do so, notwithstanding the blow administered by the Germans. So far eastern fruit has come off with flying colors in their investigation. On the whole, I think there is very little danger but what we shall find a profitable market for our apples for several years to come. Ever since I can remember anything I have heard men say: "That too many apple trees are being planted. We will never be able to sell all the apples." This depends somewhat on the varieties grown. Last year in spite of the immense crop of summer apples, such varieties as Maiden Blush, Dutchess, Red June and Early Harvest sold well, while green cooking varieties did not pay expenses. Ben Davis, Grimes' Golden, Johnathan are profitable varieties. Winesaps succeed in the river counties. Many are planting the York Imperial, and some the Gano. At Cobden, Anna, Makanda and Alma, a great many car loads of vegetables are grown for the market. Down in Union county they grow vegetables as well as fruit. They shipped from that county in one day 20 cars of rheubarb alone. Think of it—\$8,000 worth of pie plant. This would not be regarded as an insignificant shipment of corn. Let me read an item published in the "Fruit Growers' Journal," August, 1897.

UNION COUNTY TOMATO CROP.

The tomato crop of Union county, Illinois, is something enormous. Cobden is shipping from twenty to thirty heavily overloaded cars daily, and the shipment of tomatoes for the season from this single point will closely approximate three hundred cars. Anna will probably have one hundred and fifty cars, Alto Pass a hundred cars, and Dongola perhaps fifty cars. There is also probably between fifty and one hundred cars to be credited to Balcom, Jonesboro, Mill Creek and other small points will probably add twenty-five or more cars to the grand total. These are all Union county points. Rosebud and Makanda, in Jackson county, adjoining Union on the north, and Villa Ridge, Wetaug and Pulaski, in Pulaski county on the south, will also add a good many cars to the aggregate of Southern Illinois tomato shipments.

The points which made the largest shipment of the different fruits were:

Apples.....	Centralia.....	387 cars..	Marion county ...	1,000 cars..
Peaches.....	Makanda.....	74 ..		
Strawberries.....	Centralia.....	100 ..		
Rasp—Blackberries.....	Anna ..	50 ..		
Grapes.....	Villa Ridge.....	105 ..		
Tomatoes	Cobden.....	438 ..	Union county	700 cars..
Asparagus and rhubarb	Cobden.....	163 ..		
Sweet potatoes.....	Cobden.....	298 ..		
Melons.....	Alma ..	200 ..		
All kinds of fruits and vege- tables	Cobden.....	1,250 "	Union county	2,400 cars..

I was unable to get statistics as to the amount of dried fruit shipped. Partial statistics from six counties gave 169 cars. I think 10 cars to each county, or 410 cars, would be a low estimate. But as I could not get exact figures I have not employed them in this paper. I have figures here giving in detail the amount of fruit sent from each of fifty points in Southern Illinois:

Detailed Shipments from fifty Southern Illinois Points—Carloads.

Station.	Apples.....	Berries.....	Peaches.....	Mixed fruits and vegeta- bles.....	Sweet pota- toes.....	Total.....
Cobden.....	46	128	.....	778	298	1,250
Anna.....	25	130	32	393	50	630
Centralia.....	387	150	14	25	.....	576
Alma.....	100	7	50	330	.....	487
Makanda.....	108	29	74	104	59	374
Villa Ridge.....	20	84	.....	247	17	368
Sandoval.....	37	18	.....	200	.....	255
Mt. Vernon.....	206	10	.....	.....	.....	216
Wayne county.....	200	6	3	.....	.....	209
Olney.....	175	.....	10	.....	.....	185
Farina.....	50	108	10	.....	.....	168
Xenia.....	153	.....	.....	.....	.....	153
Salem.....	100	30	.....	.....	.....	130
Walnut Hill.....	76	52	.....	.....	.....	128
Tonti.....	105	8	.....	10	.....	123
Dongola.....	3	18	.....	84	12	117
Flora.....	115	.....	.....	.....	.....	115
Carbondale.....	90	.....	.....	19	3	112
Odin.....	89	17	3	2	.....	111
Alto Pass.....	.....	.....	.....	100	.....	100
Richview.....	57	37	6	.....	.....	100
Patoka.....	88	.....	.....	3	.....	91
DuQuoin.....	70	.....	5	10	.....	85
Ashley.....	50	31	2	.....	.....	83
Kell.....	30	40	.....	10	.....	80
Neoga.....	75	1	.....	.....	.....	76
Irvington.....	17	45	10	3	.....	75
McLeansboro.....	65	.....	.....	.....	.....	65
Dix.....	32	24	1	.....	.....	57
Balcom.....	.....	.....	.....	56	.....	56
Kinmundy.....	43	6	2	2	.....	53
Woodlawn.....	30	18	.....	.....	.....	48
Iuka.....	40	.....	.....	.....	.....	40
Tamaroa.....	39	.....	.....	1	.....	40
Clio.....	37	.....	.....	.....	.....	37
Montgomery county.....	35	.....	.....	.....	.....	35
Cartier.....	32	.....	.....	.....	.....	32
Edgewood.....	30	.....	.....	.....	.....	30
LaCleda.....	4	26	.....	.....	.....	30
Fairman.....	13	5	10	.....	.....	28
Vernon.....	6	7	3	6	.....	22
Pulaski.....	.....	.....	.....	13	2	15
Ullin.....	.....	.....	.....	5	6	11
Belleville.....	10	.....	.....	.....	.....	10
Enfield.....	10	.....	.....	.....	.....	10
Watson.....	9	.....	.....	.....	.....	9
DeSoto.....	6	.....	.....	3	.....	9
Bois.....	8	.....	.....	.....	.....	8
Benton.....	5	.....	.....	2	.....	7
Paris.....	2	.....	.....	.....	.....	2
	2,928	1,035	235	2,406	447	7,051

A grand total of 7,051 cars shipped from Southern Illinois last season. I know that there are many residents of the State who, while they are perfectly aware of the magnitude of the cattle and grain industry of the State, do not know that Illinois is one of the leading fruit States. Some of us think that the great fruit regions are confined to New Jersey, New York, Michigan and California. According to the figures published of a recent horticultural census of New Jersey, I find that they have forty-one thousand acres devoted to the growing of fruit. Southern Illinois has more than three times this acreage devoted to apples alone. We lead them in the acreage of all fruits except peaches. California shipped, in 1895, 4,563 cars and in 1896, 4,047 cars of deciduous fruits. Compare this with 7,051. Of course, we all recognize that California's greatest claim lies in her citrus and dried fruits. Some people, however, fail to make the distinction when making comparisons. Even their boasted grape industry is outdone by New York. I found that some people who visited the "World's Fair" had gone daft over the California fruit exhibit. They had overlooked the superior exhibits of deciduous fruits made by Illinois, New York and other states. It is the novelty of the California productions that carried some people away. These people may not believe that Egypt, that region so long derided, has surpassed California in the number of cars of deciduous fruits shipped, but it is a fact nevertheless. While the progress in horticulture has been rapid, the people are just beginning to take an interest in it. The Farmer's Institutes are doing their share in awakening an interest. Considerable planting is being done along the line of the Chicago and Eastern Illinois Railroad. In a few years, we will have two railroads running fruit trains into Chicago. We have the movement started that will develop Egypt into what she was destined by nature to be—one of the greatest fruit regions of the world.

We read that the Israelites went to Egypt to buy corn. It must be true that history repeats itself for in the nineteenth century we also find that the people also went to "Egypt" to buy corn. But now it is fruit and if you wish to get a full idea of what "Egypt" of today is I can say in the words of a talented alumnus of this university:

Come down, come down to the orchard lands
That lie to the south,— come down and see
The beautiful Egypt whose lifted hands
Shall hold the fruit of the years to be;
Come down to the fields where the apples shine
Like clustered stars, and the hearts grow light
Quaffing the odorous winds like wine,
In the drowsy hush of the autumn night.

O who would live in the corn-lands cold
Of the treeless North, when a soil like this
Is coining its hearts into globes of gold,
And holding them up for the sun to kiss;—
Or who would live in the barren East,
Or who to the deserts West would go,
When Nature is spreading the richest feast,
Here, that her beautiful hands can show?

We blush no more at northern scorn,
But fair in your face we can snap our thumbs
And over against your boasted corn
Can pile our peaches, and pears and plums;
Go build if you will your palace of maize
High in the light of the cold north sun,
But think of the pyramids we shall raise
Of golden apples, piled one by one.

What is a king on a crumbling throne,
With a painted queen and a pedigree,
When matched with the man who dreams alone
On the emerald plush, 'neath his apple tree?
The Lord He loveth all men, and so
Would lead their feet into ways divine,
But he counteth him best who toils below
In the peaceful shade of the Noble Vine.

Then come to the south where the vineyards are
 And the prodigal bloom of the orchard burns
 Against the blue, like a rising star,
 Wherever the raptured vision turns;
 Come down where the younger Egypt stands,
 Like a princess under her apple tree,
 Holding aloft in her plenished hands
 The gift of the centuries yet to be.
 JAMES N. MATHEWS.

The following question was handed to the Chairman, which he read to the audience, viz :

“How many young men are now studying agriculture in the University of Illinois?”

Dr. Burrill—About fifteen.

Humphrey—How many are studying to be lawyers in the University of Illinois?

A Voice—It don't make any difference; we need lawyers as well as farmers.

Prof. Blair—There are fourteen regular students in agriculture, and fifteen short-course students in horticulture. There were thirty-nine students in agriculture during this term.

Prof. Davenport—I am free to say there will be a good many more students in agriculture and horticulture if the State of Illinois will provide the necessary appliances for teaching those sciences.

Mr. Fursman was asked to name two varieties of strawberries for Central Illinois:

Mr. Fursman said: I have been a number of years raising three varieties. First, I take Dewban, because it is a great big fellow, and it does a man good to go out and pick a big berry. It is like a farmer's heart—always big.

Second, is the Warfield. It comes a little earlier, but is not quite so large. If you put some good Jersey cream on it, it is all right.

Third, I use the Captain Jack. Put them in a row, about fifteen rods long, and follow them with a two-horse corn plow; they will do much better and will be more easily attended by the ordinary farmer.

Prof. Davenport invited those in attendance at the Institute to visit the stock and barns of the University tomorrow afternoon.

The Chairman announced that the delegates from the Thirteenth District would meet in Prof. Davenport's office immediately upon the close of this session.

Thereupon an adjournment was announced until 7:30 p. m.

TUESDAY EVENING SESSION, FEBRUARY 22, 1898, 7:30 P. M.

President A. L. Draper, of the University of Illinois, in the chair.

The first half hour of the session was devoted to music, furnished by the University Orchestra and the Men's Glee Club. The Chairman announced that tomorrow evening the music would be furnished by the University Male Quartette and the University Military Band.

The Chairman introduced Perry G. Holden, Assistant Professor of Agricultural Physics, who read the following paper on “The Sugar Beet Industry for Illinois,” viz :

THE SUGAR BEET INDUSTRY FOR ILLINOIS.

In 1747 Margraff, a German scientist, discovered the presence of sugar in the beet and predicted that it would some day become the source of great wealth.

Fifty years passed, and another German by the name of Achard, a pupil of Margraff's, worked out a method by which he believed that sugar could be produced commercially from the beet. Through government aid, he erected a factory in 1805, with a capacity of 525 tons for the season.

The Napoleonic wars had destroyed commerce—the ports of Europe were blockaded. The price of sugar ranged from 25 to 50 cents per pound. Napoleon's attention having been attracted by the loaves of white sugar made at Achard's factory, issued a beet sugar decree, appropriating money, setting aside land, establishing sugar schools and dispatching thither students from the universities to study the new industry. A hundred or more factories, scattered over France and a few in Germany, were soon operating. But in 1815 Napoleon fell, and in the reorganization of nations which followed the battle of Waterloo, government aid was withdrawn, sugar again flowed in from the tropics, and, with one exception, the factories of both France and Germany were ruined. However, the possibilities of the industry had been shown, interest again revived, factories were rebuilt, and in 1840 the industry was again established upon a paying basis in both the countries mentioned. Since that date the production of sugar on the average has doubled with each decade, until now Europe has become the greatest sugar producing section of the globe; the production now reaching the enormous sum of 10,000,000,000 pounds annually, or 5,000,000 tons, equal to 200,000 car loads of twenty-five tons each, or a train load 1,600 miles in length.

Germany alone supplies over one-third of this vast amount—1,800,000 tons. This means that \$120,000,000 annually are either retained at home or flow into Germany from non-sugar producing countries. In ten years this has amounted to \$1,200,000,000, or an average for each of the 400 communities with factories of \$3,000,000.

On the other hand, turning now to the United States, the one-half dozen or more attempts to establish factories previous to 1873, when the Alvarado, Cala., factory was erected, were failures. Perhaps Illinois can boast of the most illustrious of these. I refer to the experience of the Gennert Bros., at Chatsworth, and later at Freeport, between the years 1863 and 1870. This experience cost the parties \$350,000. For the benefit of those who are not familiar with the history of this experiment, it ought to be said that the failure was due to a combination of causes, prominent among which were the lack of knowledge of the details of the work on the part of both the manufacturers and the growers, and to also lack of water supply for the factory.

Today the beet carries a much higher per cent of sugar than it did then, and, relatively, a much higher per cent is recovered through the greatly improved factory methods now used. Instead of 6, 10 per cent of sugar is obtained.

There are now six successful factories operating in the United States—three in California, two in Nebraska, and one in Utah. At Rome, N. Y., there has recently been completed a small factory. Bay City, Mich., or the vicinity, has closed a contract for a factory, and Henry Oxhard, who erected three of the existing factories in the United States, has begun the second largest factory in the world, near Los Angeles, Cala. It will cost over \$2,000,000, and will consume 2,000 tons of beets daily.

On the average, the United States has imported annually during the past ten years \$100,000,000 worth of sugar. To foot this bill requires one fifth of the agricultural exports of the country, or nearly the entire export of wheat and flour. The sugar of Illinois alone costs her people over \$12,000,000 annually; one-fourth to one-fifth the value of our great corn crop.

To better appreciate the magnitude of the sugar question, let us bring it into still closer range. The communities of Champaign and Urbana, with their combined population of 15,000, send out of their midst each year to foreign countries \$50,000 which ought to go into the legitimate channels of

home commerce. Galesburg, with its 20,000 population, exports \$67,000; Rockford, with its 35,000, exports \$120,000. Divided equally among the 102 counties of the State, each county exports \$120,000 for sugar. These are sums of money which the communities can well afford to look after.

However, the question of introducing the sugar beet industry into Illinois is not a matter of sentiment. It is purely a question of business, especially when we consider seriously the advisability of investing money in a factory, or, as farmers, the supplying of that factory with the raw material necessary for its operation. This leads us to inquire more fully into the relations of this industry to the community, for it must necessarily be more than an individual enterprise. The willingness of a few individuals to grow beets is not sufficient; there must be an organized community interest and support based upon something more than enthusiasm, otherwise capital will not invest. Anyone who will take the trouble to investigate the matter, can hardly fail to be convinced that the industry produces a marked effect upon the community in comparatively few years, supplying more than the ordinary conditions of prosperity.

The greatly improved condition of the rural classes in Germany within the past fifty years is due in no small degree to this great industry. The European countries were not slow to recognize the advantage of this industry, and when the limit of home consumption was reached, bounties were paid upon exports of sugar, so that today Germany, France, Austria, Russia, and Belgium produce double the amount of sugar consumed by their people. This bounty considerably exceeds \$20,000,000 annually, and no doubt has been a prime factor in enabling Europe to hold the markets of this country for so many years.

The six successful factories in the United States produced in 1896 and 1897, 40,000 tons of sugar, or an average of 6,600 tons each, worth \$660,000, which was divided between the farmers and manufacturers as follows: For the 60,000 to 70,000 tons of beets necessary to produce this amount of sugar, the farmers received, at \$4.00 per ton, \$240,000 to \$280,000; of the other, say \$400,000, which goes to the factory, \$70,000 was paid to local laborers for help in and about the factory, while another \$130,000 was paid for coal, lime rock, coke, sulphur, oil, sugar sacks, etc. In case the factory is owned by local capital, the profits of the factory will remain in the locality. On the part of the farmer, the only money which would necessarily be sent out of the community would be for tools, the first cost of which would not exceed \$90.00 for each farmer, or say \$36,000 for the community, and these would last, on the average, ten years.

These figures are for the average of the six factories. The Chino factory, during the last campaign, paid \$420,000 to the farmers for 99,000 tons of beets, and \$110,000 to laborers. The Watsonville factory, owned by Claus Spreckles, paid the farmers \$650,000 for 160,000 tons of beets. The product of this factory was 20,000 tons sugar, worth \$2,000,000. The Grand Island factory, established in 1890 by Henry Oxnard, is one of the smallest of American factories. It cost \$350,000, and has a daily capacity of 350 tons. The past campaign opened the second week in September and closed the 31st of December, running 110 days. This factory worked up, approximately, 40,000 tons of beets, for which it paid the farmers \$160,000, \$40,000 more being paid to 160 local laborers. It used some 8,000 tons of coal, 2,000 tons of lime rock, besides large quantities of other supplies. The effect of such large amounts of money distributed annually among the farmers and laborers, is felt in all channels of business in the community.

The industry has produced a marked effect upon land values and rent. Eight years ago, at Grand Island and Norfolk, land could be bought for from \$20.00 to \$40.00 per acre, and rented for \$2.00. Today the same land can not be bought for less than \$80.00 to \$100.00, and rents range from \$4.00 to \$7.00, depending on the distance from the factory, kind of soil, etc. I was repeatedly informed that there were fewer mortgaged farms about Grand Island and Norfolk than anywhere else in the State. The opportunity was not afforded to verify this statement, but I have no doubt it is true. It certainly was apparent to the most casual observer that there was prosperity in and about these towns.

To my question, "Why are you growing beets?" which was repeatedly asked of farmers delivering at the factory, one of the three following replies was invariably given: 1st. "Because it is the surest crop we can raise." The beet feeds deep and is less affected by drouth than most other crops; is not injured by frost which would kill corn or potatoes, and rarely suffers from insects or fungus diseases. 2d. "Because it is a cash crop: the price is fixed by contract and the market is certain." 3d. And the reply most frequently given, "Because there is more money in it than in other crops."

It ought to be said in this connection, that the Nebraska farmers were suspicious of the business at first, and it was with the greatest difficulty that they could be induced to grow beets for the factories. They would take no risks, and the factories found it necessary to purchase tools and rent them to the farmers, and even then they were short of beets. But the attitude of the farmers towards the industry has entirely changed. As they have become more and more familiar with the details of the business, the acreage has increased, until there is a sharp competition for contracts with the factory to supply beets, the acreage being limited only by the amount of beets which the factory can handle. Unfortunately, both the Nebraska factories were so constructed that an enlargement is practically impossible.

There is another and very important thing which the industry does. It brings into or rather builds up in the community better agricultural practices. Through the most scientific methods of breeding the sugar in the beet has been increased from 6 to 16 per cent in less than 100 years. The beet is a thoroughbred, and like highly bred animals tends to degenerate under unfavorable conditions, that is revert to the original or normal type. The careless methods too often practiced with corn would prove disastrous with the beet. Beet culture means a higher grade of farming, a more intensive agriculture. There seems to be an impression that the beet would drive other crops from the community, thus establishing a one crop agriculture. If it would lessen the production of corn, and oats somewhat in Illinois, perhaps we would agree that it would be a good thing, but I am compelled to say that it would not even do this. It can easily be shown that every other agricultural industry has increased with the introduction of beet culture into the community, due to the more intensive agriculture which came in with the beet. It diversifies the crops of the farm, but does not exclude, or even diminish any of them.

To produce our own sugar does not mean that Illinois must become one great beet field, far from it. Fifty factories supplied with 200,000 acres of beets equal to nine townships of land less one-third of Champaign County, devoted exclusively to beet culture would produce the \$12,000,000 to \$14,000,000 worth of sugar for Illinois.

Within a radius of 7 miles of a factory, or hauling distance there are 97,000 acres of land. Therefore to supply the average factory with the necessary 4,000 acres of beets would require less than $4\frac{1}{2}$ of every 100 acres provided they were all grown within this radius. At both Grand Island and Norfolk only three fifths of the supply are produced within this radius, the other two-fifths being produced outside this limit and shipped in by rail, a distance in some instances of 85 miles, so that in fact not more than 3 per cent of the land is really given up to beet culture.

COST AND PROFIT OF GROWING BEETS AND OF THE MANUFACTURE OF SUGAR.

The relations between the grower and the manufacturer are based upon a contract, the terms of which are essentially as follows: The farmer agrees to grow a certain number of acres of beets and deliver them at the factory at such times as the manager may direct. In practice it works out as follows: one-half of the beets are delivered when harvested, the remainder are pitted by the farmer and delivered at call. The farmer must purchase his seed of the factory at 15 cents per pound and sow 15 to 20 pounds per acre to insure a full stand. \$4 per ton are paid for all the beets testing 12 per cent sugar and 78 coefficient purity. If beets fall below the standard the price is reduced, but no beets will be accepted that are below 10.5 per cent sugar and 73 coefficient purity. Beets delivered during the month are paid for on the 15th of

the following month. These are the terms of the Grand Island and Norfolk contracts. There is no occasion here to discuss their merits and demerits, however there are some objectionable features which should be avoided.

The following figures are given as a fair illustration of what can be expected one year with another. They are taken from Mr. Starke's ledger and are the average of his five years experience in the business at Grand Island. The itemized statement is given as it will be suggestive.

Plowing one acre.....	\$1 50
Fitting and planting.....	1 00
20 pounds of seed at 15 cents.....	3 00
Bunching and thinning.....	5 00
Four hoeings.....	5 00
Six horse cultivations.....	1 50
Lifting beets.....	1 25
Topping.....	4 00
Delivering to factory.....	4 00
Pitting half crop.....	75
Rent of land.....	4 00
Total cost of one acre of beets.....	\$32 00
Average yield for five years, 12½ tons at \$4.....	50 00
Net profit.....	\$18 00

This year the Sass brothers near Grand Island grew 115 acres and the yield was 10 tons per acre. They received \$4,600 for the crop, paying out \$1,264 for extra help, leaving \$3,335 dollars for their labor, rent, etc. Mr. Giese, who is a very successful farmer, grew 25 acres of beets this year and 40 acres of corn. His beets brought him \$50.40 per acre, or \$18.40 above cost of production, while his corn crop, which yielded 50 bushels, was worth in November 16 cents per bushel, or \$8.00 per acre, or a little more than enough to pay the rent. He informed me that this 40 acres would be planted to beets next year.

The profits to the factory are comparatively large. Without going into detail, it might be said that the cost of manufacturing a ton of beets into sugar is \$7.00, the first cost of beets being \$4.00 and the factory expense \$3.00. This takes into consideration everything, including repairs, salaries, interest on investments, etc. The value of sugar from a ton of beets is \$10.00. In other words, it costs 3½ cents to manufacture a pound of sugar, which is worth 5 cents. Some of the factories in the United States are doing better than this.

With the present duty of 80 per cent ad valorem, and a countervailing duty equal to the bounty, our factories are protected against the export bounty system of European countries. Without protection the European manufacturer can place his sugar in our markets for less than it cost him to manufacture it.

It has been shown by repeated experiments that Ohio, Indiana, Wisconsin and Iowa can produce sugar beets of an excellent quality. The recent extensive experiments carried on in our own State leave no doubt as to the ability of Illinois to produce her own sugar, and no state in the union offers greater natural advantages. It has good soil and climate, plenty of coal, lime rock and pure water, good markets and the best of transportation facilities. What our people lack is a practical knowledge of many of the details of the business, but these can be learned here as well as in California or Nebraska. There is no such thing as a few individuals going into the business in a small way. It must be run on a large scale or not at all. Many letters have come to the experiment station asking if fruit evaporators or old sorgum mills could not be utilized for sugar manufacture. Such an enterprise would result disastrously. It requires the very best machinery for every step of the work, and skilled superintendents for each process. Whether the factory is established on the coöperative plan, as in Germany, or upon the non-coöperative, as in America, there must be a general community interest and support. In either case the people must contract to supply the factory with at least 4,000 acres of beets annually for at least five years.

Communities considering the advisability of establishing a factory should

organize, provide themselves with the best literature on the sugar beet question, appoint a committee of farmers and business men to visit some of the best factories in the United States. But this is not enough. Much more than this should be done. Each community should grow at least three five-acre patches of beets, not with hand tools, but under prevailing factory methods, using the best sugar beet tools in the market. I need only remind you that the railroad companies and implement manufacturers will do their share to encourage the enterprise.

The growing of beets should be under the direction of some person familiar with all the details of the work. This is made possible and will be comparatively inexpensive if several localities will coöperate, thus enabling one man to direct the work of 8 or 10 communities. This may cost the community \$200, but supposing it costs \$500, for the 200 or more farmers and business men in the enterprise, what does that amount to when we consider the hundreds of thousands of dollars at stake. Every dollar spent in this way will save hundreds when the factory becomes a reality, and should the people find after all that they did not want a factory how much better that it was discovered at so slight a cost. Unless the people of the community are willing to do this I would advise them to leave the sugar beet industry alone. There is a German saying that "all beginnings are hard" and this is no exception. However I predict with confidence that in no very distant day Illinois will produce her own sugar.

The Chair introduced David Kinly, Professor of Economics, who presented the following paper giving the results of an "investigation into the cost of growing corn."

Prof. Kinley read as follows:

The statistics on which these remarks are based were collected in the winter of 1896-97 and refer only to the corn and oats crops of 1896. Circulars prepared with the help of the department of agriculture of the university were sent to nearly nine hundred farmers. About two hundred and fifty replies came back. It was found that the point to which "production" carried differed very much for different farmers. Some considered that the production stopped when the corn had received its last cultivation, because they turned their hogs and stock into the field to feed on the corn as it stood. Others, and they of course the largest number, husked their corn; others, in addition, shelled it; still others in addition hauled it to market; and others, besides doing these things, cut their corn. In order to get a uniform basis of computation we decided to calculate the cost of production through husking, because nearly everyone carried his operations as far as that. We then estimated the average cost of shelling from the returns of those who reported shelling, the average cost of hauling from those who reported hauling, etc., and added these sums to the cost already obtained for production through husking.

There is of course a great deal of discussion as to what elements should be included in the cost of production. The question which the farmer asks himself, however, is this: How much must I spend per acre and per bushel in order to place my crop in the elevator? We, therefore, included all items that properly could be put under the head of expenses of production. It was found that the cost of production through husking averaged for the State \$8.72 per acre and 16.1 cents per bushel. The average yield was 54 bushels per acre. Let me repeat that this covers the cost of all processes from the breaking of the stalks through husking, together with the cost of seed and the rent of land.

How much now shall we add for the cost of equipment? We estimate that one team, one planter, etc., will do, on an average, for forty acres. The total cost of this equipment, not including cutter, will average about \$200.00. Ten per cent. of this amount was allowed for depreciation and six per cent for interest. This sixteen per cent was distributed for the product of forty acres. The cost of shelling was found to be 52 cents per acre and 9 mills per bushel; the cost of hauling to market, an average distance of 3.2 miles, was 73 cents per acre and 1 and 3-10 cents per bushel. Five per cent of the total time used in cultivation was allowed for idleness due to bad weather and the wages for that

time added in. These various amounts added to the seventeen cents gave us the total of \$11.17 per acre and 20½ cents per bushel.

There are certain items to be deducted from these figures in order to arrive at the net cost of production. The fodder is worth something, and some secondary crops are in many cases raised in the intervals of leisure between the processes of raising the corn. The fodder may be estimated at about 54 cents per acre, and it is perhaps not unreasonable to assume that the value of the secondary crops would offset the amount added for time lost on account of bad weather. Making these deductions we arrive at \$10.41 per acre and 19.1 cents per bushel as the net cost of production of the corn crop of 1896 in Illinois.

The important thing for the farmer is to determine whether corn-growing is profitable. A farmer would lose nothing if he got a price equal to his cost, in the sense in which I have used the word, but he would continue growing corn for a series of years if the price were considerably below this. It is this fact which explains why corn has continued to be produced in spite of the low prices of the past few years. But the fact that it has been produced under these circumstances does not prove that the farmer was prosperous, but rather the opposite.

It should be noticed that according to returns obtained in the investigation the yield of corn in 1896 (54 bushels) was above the average. It is not unlikely that some of our correspondents gave the yield too high, but in any event the yield on the farms which were reported to us must have been in the neighborhood of fifty bushels.

The speaker then devoted a few minutes to a discussion of the service which properly conducted statistical inquiries could render the farmers of the country. He pointed out in that connection that the State University could be made more serviceable in many directions to the farming and other interests of the State. Such inquiries as that reported on need to be continued for a series of years in order to give value. They very properly could be made under the direction of the State University.

The Chairman introduced Dr. Stephen A. Forbes, State Entomologist, who read the following paper on State control of Injurious Insects, viz:

STATE CONTROL OF INJURIOUS INSECTS.

(By S. A. Forbes, State Entomologist.)

The inducements to legislation for the prevention and control of insects injurious to our crop plants, agricultural and horticultural, and the legal methods required to these ends, are substantially the same as those for the exclusion and suppression of contagious diseases of the domestic animals, and of man himself. Regular official inspection of immigrants and of importations, the quarantine and remedial treatment of new comers sick with contagious disease, and the quarantine and disinfection or destruction of infected live stock, are measures precisely similar to those necessary to protect our orchards and fields against fungus and entomological pests coming to us from abroad; and the legal restrictions on interstate travel and commerce and on trade and travel within the states which have been found necessary in the interests of the animal life of the farm are also those needed to insure the like protection and preservation of that part of the plant life of the country in which we have an economic interest. At present the principle, the policy, and the practice of legal protection against the introduction and spread of the contagious diseases of man and the lower animals are well and thoroughly established, but, curiously, it seems that the issue must be fought all over again in the case of plants; as if it made any difference with the duty and necessity of protecting the property of the people from preventable destruction whether that property is to be classed in the botanical or the zoölogical kingdoms.

If we knew that a single cattle dealer in Missouri had pleuropneumonia in

his herd, we would quarantine against the live stock of that whole state, if necessary, to keep his cattle out of Illinois; and yet we do now know that several of the largest nurseries in states east of us with which we have an extensive nursery trade are thoroughly infested by the most destructive of the fruit insects, and we can do nothing whatever under authority of law to prevent their owners from shipping such infested trees into Illinois as many times and in such quantities as they please. If it appears that one of our farmers has glanders in his stable, there is a State officer whose duty it is to see that all diseased animals are slaughtered at once, and the owner is liable to a heavy penalty if he sells or gives to another a single horse which has been exposed to the contagion of this disease until all danger of its further spread is officially declared to be past; but there are now twenty-one known centers in this State from which the San José scale is steadily spreading, and no one has any legal authority whatever to enter upon these premises and to destroy it or to put any restriction upon the unlimited sale of exposed and even infested stock.

An attempt was made by the State Horticultural Society to secure legislation of this character from the State Legislature at its last session for the protection of horticultural property against fungous diseases and insect pests failed, partly because of the open or secret opposition of some persons who thought their business interests threatened, and partly because of arguments which apply precisely as well against existing laws for the protection of our domestic animals. To have been entirely consistent we should have abolished the Live Stock Commission and even the State Board of Health, and should have repealed the laws which it is the function of these Boards to administer.

This is not the time for a thorough discussion of the subject assigned me on this programme, but I wish to express a few opinions concerning the matter which have grown largely out of my recent experience as the official Entomologist of this State.

One of the commonest arguments against such legislative measures is often quite effective because it is professedly based on a sound and valuable principle; namely, that the State should not undertake to perform functions which may wisely be left to the individual, or to protect a citizen at public expense against the consequences of his own idleness, indifference, or preventable ignorance. Indeed the legislative committee to whose action the failure of the horticultural legislation referred to was due proceeded on this principle in reporting, as a substitute for the proposed legislation, a simple appropriation to the State Entomologist's office for investigation, publication, and instruction concerning one of the most dangerous of these fruit insects, and for the inspection and disinfection of orchards and nurseries. It was argued by members of this committee that if the Entomologist's office should instruct owners of infested premises what to do to free their premises of dangerous pests, and should lend its aid in the actual extermination of such pests and in measure to prevent their spread elsewhere, self-interest thus enlightened and the public spirit of the citizen would accomplish all that was contemplated by the law proposed.

Since July 1 have been working faithfully and energetically upon that theory, but I have already encountered difficulties so serious that I am bound to make them known as indications of the unsoundness of the major premise in the argument. I do not find it true that either enlightened self-interest or public spirit can always be depended upon even to protect the owner himself, much less to protect his endangered neighbors, against the consequences of occasional stubbornness, egotism, parsimony, inborn stupidity, and bad judgment, in matters of this description.

The appropriation made to the Entomologist's office for investigation, publication, and field work concerning the San José scale was unfortunately too small to provide adequately for the work to be done. I have consequently felt obliged to propose to interested owners a scheme of operations according to which the office should bear, from the appropriations made to it, all the expenses of an insecticide treatment of infested premises except the actual cost of the insecticide material—a cost which would range from one or two to eight cents for each infested tree thoroughly treated. Indeed, if it had been possible for me to meet all the expenses of such treatment from State appropria-

tions under my control I should have hesitated to do so as a matter of public policy, thinking it unwise, as a general rule, to apply public money to the preservation of a man's property against the consequences of his own acts. Nevertheless, the mere knowledge that an appropriation of this character had been made for this purpose has been sufficient to lead many to look to the State for the whole treatment and for all the expense of it, and to decline to take any responsibility in the premises themselves. Indeed, one owner of a worthless lot of horticultural rubbish which had been for some years infested by the San José scale to the great danger of his entire neighborhood, fearing that if the scale was destroyed on his premises by my agents he might be held responsible for some part of the cost of the operations, not only refused them his aid but denied them admission to his grounds, and only passively permitted the work to go on after being warned by some ill-informed neighbor that he would probably get into trouble if he excluded from his property a State agent entering upon it for such a purpose. The fact is that he would not have got into trouble, and that if he had persisted in his active refusal we could have done nothing whatever but to retire from the town.

In other cases the refusal to provide the insecticide, or to pay even wholesale prices for it when provided, has been explained as due to the want of money to meet such an expense. In the absence of authority to make the expenses in any way a lien upon the property this argument is of course unanswerable by us.

The worst effects of these embarrassments appear in neighborhoods where several adjoining premises are infested, and where all perhaps but one of the owners are willing and eager to incur the trouble and expense of thoroughgoing insecticide treatment, the remaining one refusing to share in this common operation and thus rendering fruitless the effort and expenditure of the others. I am, in fact, trying now to deal with three such situations in southern Illinois.

But the difficulty of creating a common sentiment in favor of intelligent and energetic action and of securing such action by every person affected and responsible, great as it is, is small compared with that of preventing the continued introduction into the State of injurious insects and fungus pests through the cupidity or carelessness or ignorance of here and there one of those engaged in the nursery trade. Indeed, we have considerable reason to fear that new centers of dispersal are being established by purchase of infected stock as fast perhaps as those already established are being obliterated by our field operations. There is absolutely no legal check at present to prevent the unloading of the most dangerous horticultural property upon the State of Illinois by the careless or unscrupulous dealer; and every once in a while we come upon such property so introduced.

Occurrences within our very recent experience thus illustrates the fact that existing agencies are not sufficient to enable us to meet emergencies, or even to protect the property of the people of the State from serious injury under ordinary circumstances and conditions.

The question naturally arises, what additional agencies are necessary to these ends? The main points of danger to be covered are the importation of destructive insects and fungus pests of fruit trees and other crop plants, agricultural and horticultural, into the United States from foreign countries and into Illinois from other states; the distribution of such pests of agriculture and horticulture within the State through the nursery business and through other channels of trade; and the maintenance of local nuisances dangerous to the property of neighborhoods, and ultimately to that of this and adjoining states, in the form of premises infested with fungus and insect pests new to the locality, or serving as breeding grounds for the unrestricted increase and free dispersal of large numbers of injurious species already known in the region.

After fifteen years of service as the official Entomologist of Illinois, two years of careful study of this particular subject as chairman of a special committee of the State Horticultural Society, and eight months' experience with active and extensive operations against the worst insect pest known to American horticulture, I must say that I see no way to give the public any considerable measure of security in these matters except by additional legislation,

national and state, intended not to supplant existing agencies but to strengthen and to supplement them.

My personal view of the national legislation needed can not be better expressed than by House Bill 6,894, now pending before the House of Representatives in Washington, and in the hands of the Agricultural committee of that body. This bill requires inspection and certification of foreign importations by an official of the government from which the importation comes; gives the right of quarantine against countries from which destructive fruit insects and diseases are likely to be brought into the United States; and establishes a system of inspection, under the direction of the United States Secretary of Agriculture, to prevent the conveyance from state to state of horticultural property subject to interstate commerce and in a condition to make it dangerous to the purchaser or to the community in which he lives. The execution of this proposed law is left in the hands of the United States Secretary of Agriculture and largely to his discretion.

I should like to see a resolution pass this body commending this bill, or its substantial equivalent, to our Representatives in Congress. I am told that it needs such support, as it is being opposed—very unwisely, I think—by some of those who believe that the importing business will be embarrassed by such a system of inspection. My own judgment is that this business is certain to become more and more embarrassed, as time goes on, by the absence of inspection and the consequent growing general dread of infection from outside sources.

I may say the same with respect to legislation for the supervision and control of trade of this description within the State. It seems to me beyond question that the business of importing, propagating, selling, and raising fruit trees in Illinois will be seriously damaged, is being damaged already in fact, by widespread apprehension of irreparable injury to customers and fruit-growers through the introduction of new insect enemies, and of fungous diseases of plants hitherto unknown to them. No measures for the suppression of information or in restraint of agitation can quiet this apprehension, because such measures are everywhere discredited through suspicion of self-interest on the part of those taking them. The only safe way out is the establishing of agencies of inspection and control which shall give practical assurance to all concerned that the nursery trade is free from taint in this particular.

If the proposed national law is passed the problem of state control will be greatly simplified, and might be solved by a law neither complicated nor oppressive in any particular, and without the establishment of any new machinery of supervision or inspection. Little more would be absolutely necessary than to give to the Entomologist's office and its qualified agents power to enter upon premises for purposes of inspection, and to give legal force to official conclusions arrived at and to official instructions given for the disinfection of diseased or infested stock.

If some such law as this, or one which would serve substantially an identical purpose, is not presently passed in Illinois it will be because those primarily interested do not stand together and work diligently to that end. The necessity of such action is, in fact, becoming yearly more urgent and imperative because of the rapid increase of interstate and international trade in horticultural products.

It will be noticed that all of my illustrations have been taken from horticulture, and that I have said nothing specific of legal control of insects injurious to the general crops of the American farm. This is because the horticultural instances are more numerous and constitute just now a more pressing and immediate emergency than the agricultural. On the other hand, it has now been shown that a large number of the insect enemies of American field crops and most of our granary pests are imported species, which have at one time or another been accidentally brought into this country, and that many others now infesting the farm crops of Europe and Asia but not yet introduced into this country are liable to be imported from abroad at any time.

On all these accounts I would respectfully but very earnestly urge upon this convention the importance of using its influence, personal and associate, for the promotion of sound and carefully considered legislation, state and

national, for the legal control of insect injury to the crops of the American farmer and fruit grower. The time is now especially ripe for such action. The national law which I briefly described, is reported to be likely to pass if properly supported, having behind it as it does the endorsement of an important representative convention, held in Washington last year. The Illinois law proposed at the last session of the Legislature was passed in the Senate by a unanimous vote of all the members present, and failed before the House Appropriations Committee in consequence of opposition, the greater part of which I have reason to believe would not again be made. Leading Illinois nurserymen were among the most prominent and active friends of the bill, and one of these men is now chairman of the committee appointed by the Horticultural Society this winter to secure such legislation at our next session. The Governor of the State has likewise taken a very intelligent interest in this matter, and has expressed himself to this committee and to others as warmly in favor of such legislation; and I think that the members of this convention can now do a very considerable public service by making their views and wishes known in this regard.

The chairman introduced Dr. T. J. Burrill, President Advisory Board of the University of Illinois, who read the following paper on Aims and Scope of the Agricultural Experiment Station, viz.:

AIMS AND SCOPE OF THE AGRICULTURAL EXPERIMENT STATION.

It is impossible to overestimate the amount and importance of progress that has been made in scientific agriculture in the last 100 years, mostly in the last 50 years. In 1795 the Earl of Dundonald had published in London "A Treatise Showing the Intimate Connection that Subsists between Agriculture and chemistry." This was the first work of the kind ever published, at least in the English language. The learned author was fully abreast with the world's knowledge upon this subject, yet how little he knew as compared with the school boy's attainments in our day. Witness the following assertion concerning the composition of plants: "Vegetables consist of mucilaginous matter, resinous matter, matter analogous to that of animals, and some proportion of oil." He indeed did understand that upon burning, vegetable substances yielded a proportion of earthy salts; but he argued that these were formed for the most part, in the processes of combustion; he was altogether unaware that they were indispensable elements of plant food. Neither was this last matter determined for some time afterward. It became a very vexed question, and remained open nearly a half century. Nothing better illustrates the difference between the fruitfulness of scientific research in our day and the comparatively meager results of the best efforts in the early part of our century, that such a problem could then so long perplex inquirers. Now any student half way through his course in any of our agricultural colleges could make an effective demonstration of the matter within thirty days. But in 1838, after the fullest feasible investigation and widest discussion by the masters of research, the Göttingen Academy offered a special prize for a satisfactory determination whether or not the constituents of the ashes of plants were essentials in plant nutrition. The following year Liebig, who had already begun those studies which was soon to make him the foremost agricultural chemist of his generation, published his *Organische Chemie in ihren Anwendung auf Agricultur* (Organic Chemistry in Relation to Agriculture). Serious mistakes were made in this work, but it was an epoch making book, far different from that of Dundonald. The way opened by the gifted investigator, together with the labors of others, especially of Bousingault in France, preceded not only in time but in genesis the idea of founding experiment stations in which the discoveries of science should be utilized for practical purposes.

Among the first thus to move was Sir John B. Lawes, of Rothamsted, England, who, associating with himself two distinguished chemists, Drs. Gilbert and Pugh, began on his own estate at his own expense, a series of investigations which have easily led all other similar undertakings, and which have been and are of priceless value to the agricultural world. The first formal

publication from this source bears the date 1847. The Royal Agricultural Society, of London, employed in 1843 a consulting chemist, a practice ever since continued and at the time an example followed elsewhere. In 1851 the Agricultural Society of Leipzig organized an agricultural experiment station, the first in the country, in which the liveliest progress was made, and in which such stations soon became more numerous than anywhere else in the world. *Die Landwirthschaftlichen Versuchs Station*, a journal of the German agricultural experiment stations, was established in 1859, and has been to the present time the most important publication of its kind.

America was somewhat slow to follow the example thus set. When in 1887 Congress provided for the establishment in each of the states and territories an agricultural experiment station, there were in successful operation three stations, founded shortly before, supported from state funds. These were in Connecticut, Massachusetts and New York. Valuable research work had been done by the agricultural departments of the institution founded upon the land grant of 1862, and one agricultural college previously established, that of Michigan, had in its employ from its early history men who devoted a part of their time to investigation. With these exceptions, it may be said that public scientific experimentation for the promotion of agriculture began in this country in 1888, scarcely ten years ago.

Such in brief is the history of these efforts and establishments. Considered in its low beginnings and now measured by recognized attainments what a history has it been! This is inseparable, of course, from the progress of knowledge in recent years through other agencies, but when all the marvels wrought by man since Liebig began his work have been recounted, the outcome of the application of science to agriculture suffers nothing in comparison with gains elsewhere. Many of the contributions have been merely explanatory of previously well-recognized phenomena or processes, like the results of horticultural pruning and the effects of tillage; others have been beacon lights uncomparably illuminating the pathway to practical success. Whether he knows it or not every farmer in our land is today deeply indebted to help which has been derived from the publication of Darwin's *Origin of Species* and to the demonstrations since made of the truths therein set forth. So too, the modern revelations of the microscope, and the results of bacteriological research, have not only enlightened the understanding but have pointed the way to abundant and masterful procedure in agricultural practice. As a mere improvement in method it has been asserted that the Babcock Milk Tester has been commercially worth more to the people of the state where it originated than the entire cost of the Station in that state. But its utility is unfettered by state boundaries. The agricultural world throughout has free and full possession of its advantages. In the Old World the experiment stations have been the means of reclaiming great areas of land from unrenumerative sterility and preventing impending loss of fertility over wide sections of the continent. Recent progress, due to studies upon the bacterial agents of nitrification in connection with the growth of leguminous crops, adds still further credit to the growing columns upon that side of the immense balance sheet. We also share in these achievements for the world of science is a unit, as is indeed the world of humanity.

The earliest endeavors were mainly confined to fields and feeding experimentation under the guidance of chemistry. This science among those closely touching agricultural practice, was not only earliest developed, but was and is very fundamental, underlying, and interrelated with, the other branches of classified knowledge to a greater or less extent. It was very natural, and inevitable, that agricultural chemistry should lead other sciences in this work at the outset. Neither is its province less today than formerly, nor are its present and prospective contributions less valuable than they were in the days gone by. There are awaiting many problems which the science of chemistry, inorganic and organic, can and must solve, and which can not otherwise be solved. The same can be said to an increasingly proportionate degree of physics. The relations of light, of heat, of mechanics, and of electricity to agricultural operations and conditions have begun to receive something like due attention. An entrance has been made into a very wide field of investigation, and success so far gives great promise for the future. It is now rec-

ognized that physical conditions of soil have quite as much to do with fertility as has chemical composition, and physical analyses are even more serviceable for practical guidance in treatment than chemical determinations ever were. The matter of drainage and the conservation of water in the soil have assumed importance vastly beyond former appreciation, though in a considerable degree the labors of trained physicists; and agricultural practice is radically changed in several particulars through similar studies. Witness the change from ridge to flat cultivation, and from cultivators with large shovels to those furnished with spring teeth. The old adage:

“Plow deep while sluggards sleep,
And you'll have corn to sell and keep”,

is found to be true only under certain conditions and at certain times. The opposite result may follow, and the explanation can now not only be made in most cases but the advisability of deep or shallow plowing in any given case can be judged beforehand, and be made to suit the special conditions and requirements. A chemical analysis may show that there is an abundant supply of lime in a soil for the needs of a crop, yet an application of lime may be decidedly beneficial in favorably affecting the mechanical composition of that soil. Thus the physics of soil is certainly as necessary in study and in practice as in chemical composition.

But agriculture has to do with living plants and animals as well as with inert matter and physical forces. The laws controlling life, its transmission, the progress of development of animate things, are no doubt as susceptible of codification and utilization as are those of the inorganic world. It is, however, not surprising that the latter have been better understood, or that they are now more completely revealed through observation and experiment. Cause and result are not so closely linked, nor the relation so readily seen in living bodies. Physiology is a higher, a more complex, a wider reaching, a more inclusive science than is physics or chemistry or both together. How a plant, or an animal comes into existence with its especial, perhaps peculiar, characteristics; how it grows, by what and through what modifications are made, what correlations exist between innate qualities and environment, between food and products; how health is preserved, and finally how the most satisfactory profit is to be made; those for their elucidation and especially for new contributions to knowledge require the work of specialists of the highest abilities and best qualifications. The problems to be solved are intricate and difficult, but in their solution lies the main hope of progress. Here we have need of quick-witted botanists and zoölogists, those trained in vegetable and animal morphology and physiology in the narrower sense, as well as skilled agriculturists and horticulturists who deal with the same sciences each from his own standpoint.

Experiment Station work is nothing if not scientific. This has always been true, but in a wide sense it grows more so every day. Haphazard experimentation is worthless. Inadequate or improper interpretation is valueless; it is misleading and mischievous. It often takes scores of corrections to amend one error. The old saying seems to be sound, that lies travel faster than truth. Every investigator is liable to make mistakes, but woe to him if these gain publication! They are sure to return to trouble him, and not himself alone, but all concerned. The term dead work has been applied to that which does not need to be repeated. It is work so thoroughly done that the results are conclusive, reliable, full. Dead work ought to be the aim of all agricultural experiment stations. Here, if anywhere, or more than elsewhere, haste makes waste. Uncertainty leads to disaster. Scientific methods must be followed and only scientific results should be accepted.

If we now follow up these ideas and concisely state some of the more important bearings, we find—

1st. That experiment station work to succeed must be thoroughly and wisely planned. The end must be seen from the beginning. Something definite must be undertaken, and this special something must be closely, persistently, followed through whatever length of time needful for its accomplishment.

2d. No attempt should be made in any one case to cover the whole field of

experimentation. This is impossible in view of the extent of the work, the great number of problems involved, and the necessity of concentrated effort needful to accomplish anything. Selection should therefore be made, choosing those things of most special importance by each station for its location and constituency. The Alabama Station may well devote much of its energies to cotton, the Illinois Station to corn, and the Colorado Station to irrigation.

3d. Each station needs to be manned in a manner specially suited to its needs. The members of the station staff must not only be men of ability and of education, but they must have the special kind of preliminary training conspicuously to adapt them to the particular work in hand. One may be eminently fitted for successfully breeding new varieties of tomatoes, another for determining the relation between foods given to dairy cows and milk products, but would meet with utter failure in both cases if their tasks were reversed, almost must meet with failure. Occasionally a master mind can cover an unusually large field, though the limitations rapidly narrow down when the chief purpose is not simply to cover a field, but to make contributions to existing knowledge therein. It is one thing to follow a path already made, it is quite another to discover, in an unknown country full of obstacles, where and how one may be made. Station workers must in a high sense of the term be specialists, and specialists along the particular lines of the work planned.

4th. Miscellaneous work at the request of residents of the state or others can not commonly be undertaken. This follows conclusively from what has just been said. Valuable results can only be anticipated when the organization of the station is directed towards some definite end, and when the men employed are peculiarly fitted to accomplish this definite purpose, and are permitted to devote themselves to it. Mr. A. thinks he has found a new kind of raspberry which he desires tested; Mr. B. has discovered, according to his thinking, a remedy for hog cholera, and desires the prestige and authority of the station to help him place the medicine in a remunerative manner upon the market. Now it might be a kindness to these gentlemen, and possibly a help otherwise, to undertake to carry out their wishes at the public expense. If such work is really in hand, and an expert has it in hand, in many cases the gentlemen can be favored; yes, and the station may be glad of the opportunity thus to extend its efforts. Otherwise the requests can not be complied with. This does by no means prevent answering all manner of correspondence on all manner of subjects upon which any of the station staff has any light, provided that this does not seriously take the attention from the work as regularly planned, and for which proper provision has been made. It is one thing to answer a letter; it is a much different thing to conduct an experiment.

I pause here in this enumeration, not because the list of such items concerning the scope of the experiment station is complete, but the better to emphasize those considered specially important, and to save your patience and time. Experiment station work is not child's play. A position upon the station staff is no sinecure. It is a place both of responsibility and of exhaustive labor. Only those who keenly feel the responsibility, and are willing and anxious to accomplish what lies within the utmost reach of their power should be retained in service.

The sole aim of each station should be, and of the Illinois Station certainly is, to be of the most possible benefit to the agricultural and horticultural interests of the State in which it is located. These interests are in Illinois both comparatively and absolutely of monumental proportions. Illinois is above everything else an agricultural State, and the Agricultural Experiment Station is not least among the agencies upon which dependence must be placed for helpful and hopeful progress in scientific and practical directions. We should never rest until the practical becomes scientific, that is, founded upon and in harmony with the immutable laws of the universe.

Adjourned until Wednesday, February 23, 1898, at 10 o'clock A. M.

PROCEEDINGS THIRD ANNUAL MEETING OF THE ILLINOIS FARMERS INSTITUTE.

UNIVERSITY HALL, UNIVERSITY OF ILLINOIS,
WEDNESDAY, FEBRUARY 23, 1898, 10 O'CLOCK, A. M.

MORNING SESSION.

The convention met pursuant to adjournment at 10 o'clock a. m. with Hon. A. P. Grout, Winchester, President of Illinois Live Stock Breeders' Association, in the chair.

On motion of Mr. Perriam the chair was authorized to appoint a committee of five on resolutions, the committee to be named hereafter.

In assuming the chair Mr. Grout said:

The thought that occurred to me as we were about ending our tour of inspection this morning was this: I only regretted that I was not thirty years younger, that I might come here and avail myself of the splendid advantages that the State of Illinois has provided for its boys and girls. I thought, when I was a young man, that I had good advantages, but my trip through the buildings here this morning has revealed to me the fact that we were not, at that time, nearly so well prepared for educational advancement as we are today.

Not long ago, in reading an agricultural paper, I came across an article, entitled "Make only new mistakes." It attracted my attention because I had always been under the impression we should avoid mistakes of all kinds, not only old ones but new ones as well.

In reading the article I discovered it seemed very good and sound advice. It is impossible for us to avoid making mistakes. It is possible for us to avoid making old mistakes. We should get out of the rut. There is no reason why we should continue in the same old way of farming and doing everything else the way our fathers did. The only way we can advance and make progress is by making new mistakes only. Let us investigate and look forward and try to do better than our fathers did and to do better this year than we did last year. Whatever mistakes we make let them be in experimenting and trying to improve our methods.

Had we possessed the advantages that the young men of today in the agricultural college have, I am sure we would have avoided a great many of the mistakes we are making today.

Further, I think if the farmers of Illinois would take the interest they ought to take in the Farmers' Institutes, they would avoid making many of the mistakes they are certainly making and would better their condition very materially.

The Young Men's Christian Association quartette will now favor

the audience with a song, entitled, "Over in the Land, Yonder."
Music.

The Chair—The Reverend J. F. Wohlforth, pastor of the First Methodist church, of Urbana, Illinois, will open the Institute with prayer.

Prayer by Rev. Wohlforth.

The Chair—Prof. Davenport has a communication to read.

Prof. Eugene Davenport submitted to the convention a letter from Prof. G. E. Morrow, formerly of the University of Illinois, which was ordered read and spread upon the record.

The letter is as follows:

STILLWATER, OKLA., February 16, 1898.

Prof. E. Davenport, University of Illinois, Champaign, Illinois.

Dear Sir:—I have just received the full program for the Illinois Farmers' Institute and write to express my gratification at its promise of unusual interest and value. While the system under which it is held does not seem to me to be an ideal one, I congratulate the farmers of the State that some provision has been made for such meetings and for encouraging County Institutes. It is peculiarly fitting that this meeting should be held at the University of Illinois. In the first years of its existence the University did good work in holding meetings of like character, although under different name, and for many years members of its faculty have done much work in attending County Institutes.

Probably it is an unintentional coincidence that this Institute begins on the anniversary of the birth of Washington. It might well have been especially planned, for there are few better methods of showing honor to the memory of the father of his country than by meeting together to advance good citizenship and the interests of the greatest industry of the nation and the State and the one in which Washington took such an especial interest.

This meeting and all of like character have my best wishes.

Yours truly,

G. E. MORROW.

On motion the Secretary of this Institute was instructed to acknowledge by telegram the receipt of the letter from Prof. G. E. Morrow and to send greetings to Prof. Morrow.

The Chair—It gives me pleasure to introduce Mr. A. C. Rice, a young and successful farmer who will read a paper on Cattle Feeding.

Mr. A. C. Rice, of Arnold, Illinois, read a paper on "Cattle Feeding" as follows:

CATTLE FEEDING.

Mr. Chairman, Ladies and Gentlemen—The question, how shall we dispose of our agricultural products, to the best advantage, is one of paramount importance to all farmers. And one that they are anxiously trying to decide. Will it be more profitable to sell all our crops on the market, or to convert them, or part of them, into meat and dispose of them in that form? The price of grain, for some time, has not been very satisfactory. But, if all the grain that has been fed to stock, during these years of depression, had also been put upon the market the price would have declined still lower. Feeding cattle, therefore, increased the consumption of grain, and by materially reducing the supply is an important factor in improving the price of farm products. But, it is objected, cattle can be raised on the plains and foothills of the west and southwest very much cheaper than we can produce them. Then how can we compete with the range-men in raising and feeding cattle. Their stock, as a rule, is inferior in quality. And as they must depend principally upon grass and hay to prepare them for market, they can not make them suffi-

ciently fat to satisfy the consumer. If we produced no better beef than they, we could not compete with them at all. Grain is necessary to make good, juicy, well finished meat. And with our improved stock, and abundance of grain, we can produce an excellent article of beef, superior in quality and finish, which will always be in demand and will sell for enough to pay for the grain consumed in its production.

The profits realized from feeding cattle may not be as great as in years past. For, as in every other business, this is subject to sharp competition. But the profits will be in proportion to the skill and economy of the feeder.

There is another element of profit to reward the farmer who raises and feeds stock. It is the manure which is returned to enrich the land. This is quite an important item, and will be more generally appreciated as our farms become worn. It means increased production, which is wealth to the farmer.

By feeding our crops at home the labor and expense of hauling them to market is saved. And some articles may be utilized for food which would otherwise be lost.

The raising of beef cattle does not receive the attention in Illinois that it did years ago. There were then, scattered throughout the State, many fine herds of thoroughbred cattle. And farmers generally kept more and better cows than at present. They were particular to use good bulls, and produced as many fine calves as possible, for it was profitable to raise cattle. But as the ranges were taken up and became the great pastures of America and range cattle came into competition with our product, and at the same time other causes conspired to reduce the profits of the cattle business, this industry languished to a great extent. Many herds of thoroughbred stock were dispersed. Farmers became more indifferent as to the quality of their breeding stock and reduced the number of their cows, and as dairying was becoming an important industry in some parts of the State, the dairy cow became popular among the farmers and were widely scattered throughout the country. So while the number of cattle decreased, the quality necessary for good beef stock was greatly injured, for the small, narrow Jerseys and the large, rough-boned Holsteins, although justly prized for the richness and quantity of their milk, make very inferior and unprofitable beeves. They are all right for the dairyman, but farmers had better stick to the beef breeds, many of which are quite satisfactory as milch cows, producing large quantities of good, rich milk. But if they are not as valuable to the farmer for this purpose, their calves are worth enough as feeders to more than compensate this deficiency.

Farmers, like other men, are liable to swing from one extreme to the other, and because they do not receive as much profit as formerly from raising calves they cease to raise them altogether. But with good management a limited number can be profitably raised on most farms, which it will be a pleasure to handle. Home-raised cattle, having received proper care, are thrifty and give the best returns for the food they consume. No pains should be spared to improve our stock. There is always a wide difference between the price of common, rough or plain cattle and those that are good, prime and fancy. It costs less to feed well-made animals than those that are ill-formed. And there is always a demand for them when they are ready for the market.

But most of our feeding cattle are raised in other states, that are not so well adapted to raising grain, where land is cheaper and grass and hay abundant, and are brought into our "corn country" to be fattened for the market. Much of our success in feeding depends upon the selection we make in buying our stock, that the animals shall be healthy and vigorous and of the quality to make rapid increase in growth and weight and produce beeves that will sell to a good advantage. This is quite a difficult matter and requires considerable knowledge and experience to be reasonably successful. Almost any one can point out a fine steer after he is fat, but it is quite a different matter and one that requires experience and judgment to know how a thin one will develop when he is fatted. The block is the final test of beef cattle, and the feeder, in all his efforts, should have this end in view. It should be his aim to handle animals that will produce the greatest proportion of high-priced meat. The herd also should be as nearly uniform as possible in age, size and

general appearance. They will feed better together and show and sell to a better advantage. Rich, bright colors indicate good blood, and good blood will tell in feeding, and they are attractive to the buyer.

Having secured his cattle to feed, his next interest is in caring for and feeding them. Much depends on the manner in which they are handled and fed. It pays to make them comfortable, for under these conditions they are contented and thrive best. Therefore provide them with shade in hot weather and shelter from the storms and chilling winds of winter.

By carefully studying the habits and inclinations of cattle one may learn much that will be of use to him in his care of them. They feed or graze in the early morning, then drink and lie down in the shade, if the weather is hot, and chew their cud and digest and assimilate their food. In the winter after they have finished their meal they seek a sunny place, protected from the wind. They enjoy the side of a straw stack or shed, where the ground is dry or covered with litter, where they may lie and ruminate in perfect contentment. One can not fail to notice how much of the time well fed cattle spend lying down when the conditions for their comfort are favorable.

A large amount of food will necessarily be consumed in supplying the heat to maintain the temperature of animals that are exposed to the storms and chilling winds of winter. And yet many farmers provide no shelter whatever for their stock other than is furnished by the fence, trees or hills, although they have been frequently reminded that it is cheaper to warm them in part from the outside than to depend on food alone to keep up the animal heat.

Any one who is able to own and feed cattle is able to provide some cheap shelter to protect them. In fact, he can better afford to do so than to suffer the loss occasioned by this neglect. A good shed should face the south, so that the sun may shine into it during the day. It should be of sufficient width to prevent its becoming muddy and to admit of mangers, in which to feed at least in stormy weather.

Dehorned and polled cattle are much quieter and more satisfactory to feed than those with horns. They stand close together at the trough or manger, almost like sheep, and do not quarrel over their food. There are no "bosses" or "cowards" among them, as is almost always noticed in a herd of horned cattle, but all have an equal chance to eat. I think dehorned and polled cattle look prettier and more uniform than others. They ship better and also sell a little more readily. It is preferable to buy those that are already dehorned, as the operation is an unpleasant one, and the shock occasioned thereby causes the animals to shrink somewhat, or at least prevents any gain for probably a month.

A very essential item in successful feeding is too have plenty of pure water within easy reach of the cattle, so that they can drink when they like without making long journeys that would weary them. A farm which is encumbered with a creek or branch is often recommended on account of its excellent stock water. But creeks and ponds, although in one sense cheap, are not desirable for stock water. Animals do not like to go into the mud to drink; and muddy or stagnant water, swarming with bacteria, is not healthful for either man or beast. A large draught of ice water lowers the temperature of the stomach considerably and retards digestion. Therefore it is not expedient to compel cattle to drink cold water from holes cut in the ice. But it is an easy matter to warm the water with a tank heater sufficiently to take off the chill, and the cattle will drink more and thrive better for it.

But the most important matter is the food.

As to what the rations shall consist of and how prepared and fed to the stock will depend somewhat on the condition of the animals, the season of the year and the relative cost of different articles of food. As a rule the food should be produced on the farm. But prices may at times be such as to justify selling some crop and buying other articles to feed in its stead. Economy in feeding consists in using that food which will produce the greatest gain with the smallest expense, and as profit is the object of feeding, economy should always be studied. It never pays to allow beef cattle to

shrink in flesh, nor to just hold their own, as the food consumed during this condition is all lost. But they should gain steadily and as rapidly as possible from the beginning until they are ready for the market.

It is in part the business of our agricultural colleges and experiment stations to analyze the different grasses, grains, etc., to determine their chemical composition, and to ascertain, by experiments, their food value for animals, with reference to the production of bone, muscle and fat. And the feeder may look to them for definite rules in preparing the rations for his stock. The results of their researches and experiments are published, from time to time, in Bulletins, and sent out for the information of those who are interested in them.

But we will speak in a general way, with reference to some of the crops in most general use on farms in feeding beef cattle, viz.: Blue grass, clover and corn. These are quite generally produced; in fact, they are the staple agricultural products of our State, and are well suited to the production of good beef. Blue grass is relished by the cattle and produces rapid growth and development of the animal in general, but especially of bone and muscle, and when supplemented with corn makes excellent food for the rapid production of beef. Clover makes good pasture, and on account of its deep-reaching roots, is able to withstand the drouths which soon withers the blue grass. It is very nutritious, and with the addition of a corn ration produces rapid gain and makes cattle quite fat. Feeding grain in connection with clover or blue grass during the grass season is generally very satisfactory.

But among all the crops produced on our farms, corn, the most abundant, is best adapted for the principal ration in feeding and finishing cattle, especially during the winter. It is rich in fat producing elements, and with the addition of some flesh producing food, like clover, hay or wheat bran, will produce excellent results.

Many farmers who are going to feed cattle on corn in order to accustom them to the grain, and also save what might otherwise be wasted, start them in stalk fields, but this practice is doubtful economy, and is contrary to scientific principles of feeding. For animals unaccustomed to grain should be brought up gradually from a small quantity at first to a full ration in order that their stomachs may accommodate themselves to the new and more concentrated food to prevent indigestion and surfeit. But in the stalk field the food is most abundant at first and gradually diminishes from day to day. Usually the cattle shrink in weight before the farmer is aware of the fact. And generally the practice is "penny wise and pound foolish."

Corn stover fed in racks or shredded and fed in connection with grain, has considerable food value and may be substituted for hay.

There is a great deal of waste in feeding whole corn, even if the ears are broken in the trough, for the cattle drop a portion of it under their feet, and a per cent they eat is not masticated and can not be digested. Of course this may be saved by keeping a sufficient number of hogs with them. Much of this loss is prevented by crushing or grinding it for them, and at the same time it is rendered more digestible. The cob and husk ground together with the corn seems to make it more wholesome for the stock and takes the place, to a certain extent, of more bulky food, which must be fed in connection with it.

Two methods of feeding are practiced by different farmers, first, supplying them each day what they require, one feed at a time; second, allowing them to help themselves when they wish to do so at a self-feeder, where a small quantity is constantly in the troughs, a little running in as it is eaten. Both ways are satisfactory, producing good results. But the self-feeder is becoming more popular, as it requires less labor and time.

Two of my neighbors are feeding each fifty steers of about the same age and quality. They both feed crushed corn and clover hay. One carries the grain out morning and evening and gives them just what they will eat up clean and provides them with good shelter. The other has a barn, with the south side open like a shed, so the cattle may go in and out at pleasure; a corn crib, with a small room by it for the crusher is built on at one end. As

the corn is ground it is elevated and runs into a self-feeder in the center of the shed. It holds sufficient for about two weeks' feed. The hay is stored in the loft above and is pitched down into a rack in one end of the shed. It is difficult to decide from appearance which herd is gaining faster, for both are doing well. I have never used a self-feeder myself, but I believe they are practical and economical, especially during finishing period.

The farmer who will study to improve his stock and raise as many cattle as he reasonably can, who will feed none but high grade animals, and feed them economically on the best food that he can produce on his farm, handling them with regularity, kindness and common sense will be well rewarded for his pains, and will far outstrip his neighbors, who from lack of enterprise depends for his living solely upon marketing his grain and hay.

The Chair: We all regret the unavoidable absense of Mr. F. J. Berry of the Union Stock Yards, Chicago, who appears on the program for a paper on "The Up-to-date Horse and Export Demand." Mr. Berry's paper will be read by Ralph Miner, of the Agricultural College.

The paper was as follows:

"THE UP-TO-DATE HORSE AND EXPORT DEMAND."

Mr. Chairman. Ladies and Gentlemen—The subject before us is the American horse of today and the export demand. I will endeavor to show you the kind of a horse that the markets demand at present and the most salable kind of a horse for the export trade.

Every horse should be bred for a purpose, and to meet all the requirements of his class, with all the qualities that is required of his class at the present time.

There are five distinct classes of horses, and every horse for the market has to fill all the requirements of one of these classes or he is condemned as a no class horse, and is of but very little value, and would not sell in our markets today for anything like the cost of producing him, therefore he would be considered a failure, at the same time he might be a very useful animal in the country, but would not sell in our markets for anything like what it cost to produce him. Small, rough and ordinary horses are a thing of the past, and never will be of but very little value again.

The export demand is divided into five different classes, of which I will give you an accurate description later on, and every horse must be an animal distinctly of his class, and the grades that are the most saleable and profitable horses to produce for all export markets are the very same kinds that are the most saleable in all American markets, therefore a man in breeding horses for the export demand can make no mistake, as the very same kinds that meet that requirement are the ones that are the most saleable and profitable in all American markets, and the up-to-date horse of today is a very much different animal than he was five years ago, therefore the breeder of horses is not left to his own resources, as he has been in former times, but has a fixed type before him demanded by the market, and to meet the American demand as well as the export he has to breed strictly to a purpose, and every horse must be one of the five different classes.

In former times there were no classes of market horses, every farmer could breed to his own fancy, and usually bred the kinds of horses he might have regardless of what he might produce, and as every man had different ideas all kinds of horses were bred and raised. In this way a larger per cent of the stock produced was too small and inferior and low grade to ever make a marketable and saleable horse. Before 1887 there never was a regular market established in this country where a man could ship a load of horses and close them out immediatcly on the market, neither was there any fixed market values until that time, it was just as men could agree on prices, and there were as many different ideas about the values of horses as there were different horses, therefore every man bred and raised horses according to his best judgement, and sold them whenever he could, or he would bring them to market, and they would sometimes stay at boarding stables until they nearly

eat up their value in many cases, and the larger part of them, he would finally find a customer where he could sell them at some price, but very often he would ship them back home, thus making horse-raising very unsatisfactory and unprofitable business, although horses were high at that time, but about 1887 there was a market established at Union Stock Yards, Chicago, Illinois, where all horses sold readily at market prices. This market increased and grew stronger until now it is the largest horse market in the world, and a man can ship a car load of horses, and sell them as readily as cattle, and prices remained high all the time until the panic of 1893 when all branches of business were depressed, prices became very unsatisfactory, and all kinds of properties selling low, especially the horse. It has been said that there was an overproduction of horses previous to the year 1893, and we presume there was of the class that was produced, but at the same time there were not too many good horses produced had the times remained good they would have all been taken at firm prices, but while the supply was on hand, the demand decreased, and it left an oversupply of horses, and the most of them were very unsaleable and inferior, and small, and during the depression from 1893 to 1897 many changes went on, and under them the whole horse problem was revolutionized. While the wheel came in, and it has been said took the place of the horse, we doubt very much if the wheel has decreased the value of the horse either in price or in numbers. While it has in a small measure taken the place of the small horses, it has made a demand for a larger and finer animal, and as the interests brought about by the wheel has improved streets and roads, it has been the means of increasing the demand for a larger animal and finer horse. We very much doubt if the wheel has depreciated the value of the horse either in use or in value.

It is believed by some that electricity will take the place of horses; we believe it never will; it is not practical; we believe this is an erroneous idea. horses have been beasts of burden and pleasure ever since civilization, and we believe they will remain so. While the electricity has taken the place of the street car horses, there are many other uses will make a demand for the horse in this period. Electricity has extended the street car lines far into the suburbs, this causing people to live farther from the center of the city where they can secure cheaper homes, and many of them keep horses of their own, which never kept them before. And as all goods are delivered from the center of the city to the suburbs where one horse was used for delivery wagons three years ago, there are five used at the present time, thus making a large increase in the demand in this direction.

In the meantime the export demand has developed, which commenced in the year 1893, doubled in 1894, doubled again 1895, and 35,000 horses were exported in 1896; 50,000 horses were exported in 1897; thus while the demand has decreased for one purpose, it has increased for many other purposes, making a larger demand today than ever before. And as the amount of colts raised since 1893 has been mere nothing, our visible supply of American horses is reduced about three millions, and we are not only reduced in numbers, but in a much larger per cent in quality. Good horses have become very scarce, and there will be a great shortage of the best kinds of horses in a very few years. But the great depression has all passed away, times are better, business is good, there is a stronger demand for all grades of horses, while our very choicest specimens of light harness and coach horses and heavy draft are worth nearly double today than what they were two years ago. The medium classes have advanced considerable, while the lower grades still remain low.

Now I will give you a description of the five different classes covering the export as well as the domestic demand.

Class No. 1—Drivers and coachers, which must be of good color, well bred, Wilkes preferred, from 15:3 to 16 $\frac{1}{2}$ hands, with fine heads and necks, plenty of bone and substance, short back, smooth hip, round barrel, good style and actions, the latter being the most important, must be a good traveler, and if some speed all the better. This class has advanced very much in price, and are worth nearly double the price they sold at two years ago, and range in price from \$100 to \$300. Some very rare specimens of this class have sold in our auction in our Chicago market the first week of January as high as \$450.

In case of a lack of Hambletonian stallions with size to produce this class, the French coach horse has been crossed with the trotting bred mares with extremely favorable results, and it is the opinion of the best breeders and horse men that we will have to cross our good trotting bred mares with the French coach horse in order to produce the light harness horse large enough and combined with quality to meet the coach horse demand. It is believed that this cross of breeding will not only produce a fixed type of a coach horse that shall possess all size and quality, action and style, and still retain the road qualities required, as every light harness horse should be well bred in order to stand the wear and tear and hard work of pavements, and the long drives of city service, and the more he partakes of the blood of the trotter the better.

Class No. 2—A cab horse, rather blocky made, weighing 1,100 pounds and standing $15\frac{1}{4}$ to $1\frac{1}{2}$ hands, smooth made with bone and substance, fair traveler, price about \$75. This class of a horse is a very saleable kind of a horse for many purposes, but there are always plenty on our market, and too plenty to be profitable horses to raise, at the same time in breeding horses the breeder will always get some of this class, and you will find a fair demand for all, although the price will never be high. This is the smallest class that ever should be bred, as there is no demand for anything smaller except at ruinous prices.

Class No. 3—A bus horse, which is a blocky, smooth made horse, must shape himself well in harness, standing $15\frac{1}{4}$ to 16 hands, plenty of bone and substance, fair traveler and fair action, weighing from 1,250 to 1,400 pounds. This class of horse includes the quality of not only an omnibus horse, but of an express and general purpose horse. The English use the blocky lower set ones for busses, while the larger ones are used for express and general purpose. This class of horses is in the strongest demand in all American and foreign markets and sell at from \$80 to \$125, and can be produced best by a Percheron horse crossed with a smaller mare that has some breeding and good style and action and road qualities.

Class No. 4—The draft horse, which should weigh from 1,500 to 1,800 pounds, blocky made, heavy boned with smooth finish, good quality and action, and a first-class draft horse in every respect; present price from \$100 to \$250, and the best specimens sell as high as \$300. This class is one of the most saleable and will find ready sale in all domestic and foreign markets, and can be produced from the best heavy draft mare of good quality crossed with the best heavy draft horse of high quality regardless of what breeding of a draft horse he might be as long as he possesses all the qualities of a draft horse.

Fifth and lastly—The American trotter, which in all cases must be a high bred trotting horse, with good bone and substance, high finish, good action and disposition, and the more speed he has the higher price he will bring, ranging in price from \$200 to \$5,000, according to his quality, size and speed.

All horses for export must be perfectly sound and without blemish, and are bringing at present a higher range of prices than horses sold for any other market.

Good horses will get higher and higher for many years to come, as there is an increasing demand, and as most all Europe have turned their attention to our American horses, and they are giving such entire satisfaction, that it seems to be the general impression that all countries in Europe will want American horses for many years to come, and breeding is reported to have ceased there, as they can buy American horses much cheaper than they can raise them on their thickly populated and high priced land, and we believe there will be no let up to the export demand and that it will increase all the time, and nothing can ever stop that demand unless it should be the extreme high prices and the scarcity of good horses.

The greatest need of the present day is a fixed type of a coach horse or light harness horse, and we believe that the best blood to produce them is the American trotter, and we also believe that if the same care is taken to produce size, shape and quality that there has been to produce the American trotter with extreme speed, that a still higher class of horse can be produced from the blood of the trotter by combining size and qualities with his road

qualities, and in case of a shortage of Hambletonian stallions with size to produce this class, we would heartily recommend to bridge over the present emergency the French coach horse for the first cross until you get the size and quality, and then breed back to the American trotter. The American trotter is the highest class horse the world has ever produced, has been evolved within this century, and we have every reason to be proud of him, as he is purely an American product, and has made a world wide reputation.

It should be our main aim now to produce a fixed type of a coach horse, and when this is accomplished we have got the most profitable and most saleable horse the world has ever produced.

The Chair: Hon. J. M. Bell, President Illinois Sheep Breeders' Association, Decatur, Illinois, will address the Institute on "Our Sheep Industry."

Mr. Bell said, in substance, that after a long period of depression, the sheep industry was divided. That attention will not be given entirely hereafter to the growing of wool, but more attention will be given to the raising of better sheep for mutton; that we must furnish the sheep with good pasture. The better the pasture, the better the care and the breed of the sheep, the better will be the price and the greater will be the demand for the mutton. Those who are devoting their attention in Illinois to raising good mutton are doing well and making money.

In Illinois our situation is particularly happy. We have the best land on the face of the earth. We can raise more corn than anybody and just as much clover, hay and blue grass pasture. And as all of this is good for cattle so it is good for sheep. We are drifting in the right direction, and we can beat the world in raising good mutton if we try. In Macon county we have corn to burn. Why? Simply because there is no corn fed there. I was told yesterday by a gentleman that he could not buy a carload of fat hogs in Macon county today. And very few cattle are fed there. The corn is shipped out and I am not afraid of being contradicted when I say there is not a county in the State of Illinois today that has as little ready money in it as Macon county. And why? Because the whole county is filled full of corn cribs containing corn not sold. Why is Nebraska so successful and prosperous? Because the farmers get forty cents a bushel for their corn to be fed to sheep right there. They are raising corn and feeding it out to the sheep right on their farms and building up their land and paying off their mortgages. Why should not we do the same way? It might be said our lands are too flat. Perhaps they are for breeding purposes. We are not obliged to breed sheep. We can buy the lambs and feed them.

My own opinion is that we can breed our own sheep, raise our own corn and make more money in feeding them than to bring in sheep from other parts of the country. We have plenty of land good for pasturage that never ought to be plowed. They can be used for raising the sheep and the fertile prairies can raise the corn to feed them. Nothing recuperates land so rapidly and restores to it fertility as pasturing it with sheep. Much of our land is beginning to need this.

I would recommend young men to engage in the sheep industry, to study the best methods of raising sheep. I believe there is more in the blood of the sheep men than in the blood of the sheep themselves. I believe there is no better way for a young man to build up a fortune and a happy and lovable home than to carefully and intelligently devote himself to the sheep industry in Illinois.

The Chair: Mr. Fred H. Rankin, President Illinois Swine Breeders' Association, Athens, Illinois, will favor us with a paper on "Our Swine Industry."

Mr. Rankin read as follows:

OUR SWINE INTERESTS.

Address delivered at the Illinois State Farmers' Institute, held at Champaign, February 22-24, 1898.

It has been said by high authority that in our American hog we have an automatic, combined machine for reducing the bulk in corn and enhancing its value.

A machine that oils itself; puts ten bushels of corn into less space than a bushel measure and in so doing quadruples the value of the grain. Corn loaned on a well bred hog is cash at a big interest. A good brood sow is an ideal of safe investment,—a sort of bucolic bond, the coupons of which materialize in large litters of pigs convertible into "cash on demand."

Our modern pig is a condenser; he is also a manufacturer of hams, bacon, lard, illuminating oils, hair brushes, tooth brushes, head cheese, glue, buttons, fertilizers, soaps, souse, sausage and,—satisfaction. More than this, the well bred American hog is a mint. And the yellow corn of our common country is the bullion which he transutes into golden coin. This mint is honest. It gives sixteen avoirdupois ounces of edible material—healthy pork—in every pound of meat which it coins. There is no attempt to decree, but it generously gives nutriment. But this coinage is not gratuitous. It charges a swinish seigniorage, in good care, honest vigilance and intelligent handling. There can be no flat pork.

Just now we hear much about our "export demand," but we find that to command the markets of the world our American pork, like the American dollar, must be of standard quality and fineness.

Our hog will remain "a thing of beauty and joy forever," at least so long as there is a mortgage to lift, a house to build, taxes to pay, a piano, a surry, a dress or sewing machine to be paid for. And having paid his debts to the farmer, he goes forth on a voyage abroad, a privileged character, whose company is sought by rich and poor.

In all civilized lands he is equally at home at the tables of high born lords and ladies and in the rudest cabins of the lowly.

The hog stands today, and always has, the peer, if superior to any of our domestic animals as a money maker.

It has been said, that for big money breed horses; for sure money, cattle; but for quick money, hogs. Yet today we might combine all three sayings in the latter, as the breeding and feeding of swine most assuredly pays the general farmer in Illinois better, surer and quicker than any of our domestic animals, not even barring the hen or dairy cow.

The swine industry in our State has been greatly benefited by the discussion of topics relating thereto, at the various county and congressional farmers' institutes held during the past year. In the interchange of thought we gain wisdom and knowledge. We are all seeking more light, and if we are able to apply what we may gather we are indeed wise.

An idea has been established for us to work to. To be successful in rearing swine requires head work, as well as hand work. There is an evident tendency on the part of our farmers, as well as among the breeders of recorded stock, to "grade up" our herds.

Pure bred males are more generally used, more care and attention are given to the selection and treatment of breeding herds. The combination of as many of these good points as possible is a good thing, and is resulting in the shaping of our farm herds so that a large per cent of them readily pass inspection as very nearly pure-bred hogs.

This increasing demand for quality rather than quantity is to be commended, and we firmly believe in the advisability of the reduction, in many instances, in the number of our breeding herds, and would advocate a higher grade of hog and better care thereof. This would not only regulate the supply, but reduce the liability of widespread infection of disease.

About ninety per cent of the hogs raised and sold by breeders are purchased by the pork producer and farmer. Hence the question of supply and demand and sanitary regulations are of as vital importance to the breeder of registered hogs as to the man who raised hogs for the butchers' block.

The interchange of ideas and experiences upon our swine industry at live stock meetings and Farmers' Institutes is truly a conference for the best interests of the largest number of people, for it will make hog raising more profitable, and will furnish to the consumer in our cities a better, cleaner and purer article of food, that will conduce to health and better living of all the people.

The hog product of Illinois is made from hogs of the various improved breeds of swine, mainly high grade Berkshire, Poland China, Chester White and Duroc Jersey.

The pigs are mostly farrowed in March, April or May, and as soon as old enough are given the range of large clover or blue grass pastures, and when not running after cattle are fed some corn and mill feed. The large range of pasture, pure air and water, and the healthful exercise necessary for hogs to obtain sustenance develops the growth of muscle and lean meat, and the quality of this meat when finished off on corn in the fall months is not to be compared with the soft, greasy meat resulting from swill feeding of swine in ill ventilated pens, as is the general custom abroad.

There is no pork made anywhere in the world that can compare in cleanliness, healthfulness and all that goes to make a delicious article of swines' flesh with our American corn-fed pork.

When judiciously fed, there is no healthier food than Illinois corn for hogs; and it is an established fact that there is no better meat food than that which has for its foundation the Indian corn of our common country. It is the sheerest of nonsense, it is foolish, to claim that American hams and bacon are not, on the whole, exceedingly healthy and wholesome.

The principal reason that our pork product is discriminated against in some other countries lies in the fact that it sells cheaper and is better than their own productions.

It is a well known fact that in the past the highest priced fancy pork products sold in Ireland by Limerick dealers were put up in Chicago, and by special instruction marked with the private brands of Limerick dealers, who had for years past been selling Illinois pork products on the continent as Irish bacon and hams. The authority for this statement you can find in Consular Reports Nos. 122 and 129.

In further proof of this rank dishonesty being practised by unprincipled dealers, the Bacon Curers' Association of Great Britain have recently prosecuted the Junior Army and Navy Stores of London for selling American hams for Irish, and secured a fine and costs amounting to about \$360.00.

Investigation showed that the American hams were changed into "Wiltshire hams" by oiling and rubbing some meal over them and branding them "Finest Wiltshire." They were then put on the market purported to be Irish cured products and sold at 24 cents per pound, while that part of the identical consignment sold as the American ham was worth only 17½ cents per pound.

A. Leeds, correspondent of an eastern paper, writing from _____ states that in that market the very best American hams can be bought at 13c. per pound and they need no "faking," and adds: "What your farmers have to do is simply to keep up the quality of your product, for the English market is assured to them." Unless our pork product is sold under its own name and on its own merits we can not expect to build up a foreign trade upon the merit and excellence of our product. The great trouble with our friends across the Atlantic is that America's exports exceed her imports, that she is growing rich somewhat at the expense of other nations. Unless we are not mistaken this disparity of trade between the Old World and the New is the prime reason for the prejudice against the American pork product and has had more to do with raising the cry of trichinae than the existence of the

parasites themselves. The truth of the matter is trichinae are occasionally found in swine and some other animals, particularly the rabbit, in all parts of the globe. The remedy or specific is well understood by all civilized people. This parasite, we are told, is effectually destroyed and rendered innocuous by submitting meat containing them to the boiling point of water. This cooks the parasite and no flesh of any kind is safe to use as human food unless its temperature has thus been raised.

If it had not been for the cannibalism of some of the people of this and some European countries, who persist in eating raw pork, we perhaps would never have heard of the trichinae outside of the laboratory of the chemist or the lecture room of the scientist. How can you protect a man—even with microscopic inspection—who will go and deliberately eat raw pork, heedless of its condition and in direct opposition to every dictate of reason and every decree of civilization?

We claim a superiority over the Fiji islanders, forgetful that we have cannibals in our midst who eat raw pork of every conceivable age and quality, and then express holy horror at the Fiji man eating "raw missionary."

A mere observance of the most primitive laws of civilized life which demand that we make a distinction in the matter and manner of taking of food between the cannibal and ourselves, would be the surest safeguards for American and European pork in the provision markets of the world.

An enthusiastic and eloquent writer says: "The hog was introduced into Virginia in 1609 and it is to the pig more than to all other causes we are indebted for the wonderful expansion and remarkable prosperity which have marked our history, as well as for the permanence and development of those institutions that form our chief pride and have attracted to us the eyes of the world."

These are strong words and may seem an ultra statement, but if you will consider what this country would be were the hog and all that his product has contributed to our material prosperity, stricken from our land, it will then seem none too strong.

America is preëminently the home of the hog; he is a logical deduction from Indian corn. If it takes seven pounds of corn on an average to make one pound of pork, as is no doubt the case, our farmers are seeing the great economy of exporting one pound of pork instead of the seven pounds of corn, besides in the foreign market the pound of meat is usually worth more than its equivalent weight of corn.

America produces annually from forty to fifty million head of hogs. According to the Bureau of Statistics at Washington in the year 1892 we had fifty-two million head of hogs, following which there was a steady decrease in numbers, showing only forty million swine on January 1, 1897, which is the lowest number listed during the past seventeen years.

In view of authentic statistics showing a net decrease of over 23 per cent in the number of swine during the past five years, and an increasing export demand, the outlook is most promising for the swine industry in our State.

An interesting phase of this subject has been the growth of our export trade in hog products.

The number of swine and their value exported—counting 175 pounds of product as equal to one hog—in the year 1896 was 6,480,950 head, worth over \$90,000,000. Comparing this with other exports as given by the Bureau of Statistics for the same year shows—without reading the figures—that if we count all the exported horses and mules, all the cattle and fresh and salted beef product, all of the sheep and mutton and all the butter and dairy product sent to alleviate the hunger and other wants of people in foreign lands, they foot up as a total less by considerable than we realize from our surplus hogs and products which we send abroad. The United Kingdom of Great Britain alone takes more than three-fourths our exports of hams and bacon.

The numbers and values of swine are constantly fluctuating, from various causes, the principal one being the ups and downs in corn values.

Stock hogs and pork products sympathize with these fluctuations.

Numerically considered, Iowa is the first hog state in the Union, having 4,854,000, which is 600,000 more hogs than are in the United Kingdom of Great Britain. Missouri, Texas and Ohio rank next in order named, while our own State stands fifth in line, with 2,392,000 hogs; six years ago Illinois ranked second in this industry. The loss from disease in 1896 amounted to 12½ per cent the entire number of swine in the United States, estimated to be worth about \$100,000,000. The average loss per year for the past seventeen years was 8.6 per cent.

With an advance in the price of hogs, and three large corn crops in the country, the tendency and temptation will be to rush pell-mell into hog raising, regardless of quality in obtaining quantity. It seems to work that way, and in two or three years the "projikin" farmer—whose plans are as variable as a western wind—will be swearing "there ain't no money in hogs."

But experience and observation confirms the speaker in the belief that there is no branch of farming or live stock husbandry which, conducted with a reasonable degree of good common sense and perseveringly staid by, one year with another, will do better by its proprietor and more successfully keep the wolf and the sheriff from his door, than the rearing of swine.

The method of disposing of pure bred hogs at public sales has become very popular during the past few years. It is not our purpose to speak of the merits or faults connected with the system, nor to comment on the sensational prices that have characterized some offerings, further than to say that experience has proven that live stock can no more be boomed beyond its legitimate merits than can a town or city.

That the "scalping element" and speculators have figured in some of the sales of pure bred swine held during the past two years can not be denied. Nothing will so quickly impair the confidence of our hard-headed farmers in the thoroughbred swine business than the conviction that it has become the football of speculators. But we have faith that the integrity and good judgment that is characteristic of the American people—especially of the "hog man" and farmer—will ultimately prevail.

There is a danger incident to the public sale system, which is the tendency to turn the hog into an animated lard can, having insufficient vitality, and lack of strength in frame work, as more especially shown in the feet and limbs of some breeding stock.

The buyer picks the nice plump pig, and the seller thinks that fat, like charity, covers a multitude of sins.

Your breeding stock should have the capacity to produce strength and vigor, and any fashion or custom which leads us in the opposite direction is fraught with danger.

The modern requirements of trade in our pork product demand a marbled meat or "streaky" bacon. To meet this present demand let us study the art and science of feeding our hogs and we will keep pace with the changing demands for lean meat. Let us keep all we have gained in the improved breeds of swine, and not switch off on to the Tamworth hog, that has only its length and leanness to recommend it.

Our breeders and farmers must remember that the Tamworth nor any other breed of hogs will not convert a fattening food into juicy, lean meat.

If the bacon hog is to be the hog of the future we believe that it will be an American hog, produced by American breeders, and fed by American feeders to meet the demands for the best. It is nonsense to argue that the successful producers of bacon are limited to one or two foreign breeds of swine. We believe that in our corn states it is rather a question of selection, from our present breeds, and changing of feeds, to produce the quality of pork demanded by our foreign trade, rather than sacrifice the achievements of the last half a century in improving our breeds and producing hogs of early maturity, and replace them with the rough, lean Tamworth hog—the ugliest pig in all England. If we are rightly informed the Tamworth hog is not so popular, even in England, as are the Berkshire or Improved Yorkshire breeds.

No domestic animal on the farm requires closer attention than swine, and none will pay you for your time so well. But if you do not like the business, and are not disposed to give it your close personal attention, the speaker would advise you to turn your attention to other industries, and sell every hog you have or you will probably be obliged, sooner or later, to find your ledger getting heavy on the wrong side.

Now, while we have talked "jest hog," we do not mean to advocate that the Illinois farmer should toil early and late, depriving himself and family of needed rest and recreation, to raise corn, to feed hogs, to get money to buy land, to raise more corn, to feed more hogs and so on in this circle until the Almighty stops his hoggish proceedings.

We are glad to note that the true mission of the Farmers' Institute in creating an intelligent citizenship, is being incorporated in the agricultural and educational interests of our State; and to testify that the spirit of improvement and progress is more general among our Illinois farmers than ever before, and that the farm home is becoming more and more the seat of comfort, the center of intelligence, thrift and happiness, the source from which shall come strong men for all vocations.

May we all help to this end.

The convention took a recess until 1:30 p. m.

WEDNESEAY, FEBRUARY 23, 1898.

AFTERNOON SESSION. 1:30 P. M.

The Institute met at 1:30 p. m., called to order by President Moore, who introduced Mr. Fred Hatch, president Alumni Association of University of Illinois, as the chairman of the afternoon session.

The Secretary, W. E. Robinson, of Greenville, Illinois, not having been present since the morning session of the first day of the Institute, C. J. Lindermann, of Chicago, was elected secretary *pro tem*.

President Moore, pursuant to a resolution adopted during the morning session, appointed as members of the Committee on Resolutions: Chas. F. Mills, Springfield; G. W. Dean, Adams; A. G. Judd, Dixon; Eugene Davenport, Urbana; L. N. Beal, Mt. Vernon.

President Moore announced that the Committee on Resolutions would meet directly after adjournment of this session, and requested all parties who had resolutions to present them to the committee.

A violin solo was rendered by Miss Putman, instructor in music in the University of Illinois. Piano accompaniment by Miss Forbes.

Mr. Higgins, of Ottawa, Illinois, by special request, sang a number of humorous and topical songs.

The Chair: It is a pleasure to introduce Hon. A. P. Grout, President Illinois Live Stock Breeders' Association, of Winchester, Illinois, who will read a paper on "Our Live Stock Interests."

Mr. Grout read as follows:

OUR LIVE STOCK INTERESTS.

Undoubtedly the live stock interests of Illinois can justly claim our most serious consideration and are of more importance than any other branch of agriculture.

They are important not only because of the vast amounts of money represented in the raw material and the great expense in caring for, furnishing feed and fattening for the market, but they are important because they furnish the best market for the grain and produce of our farms, and, because no system of rotation or farming is complete or can be made successful without live stock.

We do not wish to advocate or boom live stock because the outlook is today better than it was a few years ago, but because of its own intrinsic and inherent value, and under the firm belief that the business will pay 100 cents on the dollar every time when rightly managed.

We desire to consider the subject freed from all speculative interests and on its own merits.

It has never seemed to us wise or profitable to sell our sheep, horses, hogs or cattle, and go out of business during a time of depression and then buy them back and commence the business again when on a boom and much enhanced in value.

It would be better to pursue the opposite course and "head up stream" instead of down. Sell our stock when the business is prosperous and prices good and buy them back again during a time of depression and low prices.

The tendency with a large majority of our farmers is to speculate and rush into that branch of agriculture or stock raising which promises the largest and quickest returns, regardless of cost, and with the sure and certain result which can only attend such ventures and practices.

It takes large sums of money and years of time to build up a good first class herd of live stock, as well as careful and well-directed labor, intelligent management, experience and good judgment.

With the practices of the past in vogue it is not surprising that the live stock interests of Illinois are not today what they have been or ought to be, or that the magnitude and glory of its once famous cattle interests have departed and that the strictly first class lots of fattening steers are few and far between.

The times and conditions surrounding the live stock interests of Illinois have changed very materially in the past few years, and the methods and practices necessary to successfully meet the changed conditions demand careful consideration at all hands.

The time has arrived when we should consider well what we are doing and whatever we undertake lay the foundation broad and deep. In all our operations we should keep the future steadily in view, rather than the present, the maintenance of the fertility of the soil rather than immediate profits.

To preserve and maintain the fertility of the soil is the first requisite to successful agriculture. It has been said that how to maintain the fertility of the farm is the question of all questions in farm life. To solve it would add more to the prosperity of the country than to solve a great many of the so-called problems of the day. There is generally two sides to every question, but there is only one to this, namely: We must save the manure. Without stock there is no manure. Without manure there is no fertility. Stock raising therefore is the foundation of successful farming. It is impossible to retain the fertility of a farm not connected with animal industry.

In view of these facts, we would reverse the usual order of things and would keep stock for the purpose of maintaining and increasing the fertility of our farms and not keep the farms for the purpose of maintaining the stock. We would make stock raising the means of aiding and promoting our farm operations and not the end or object to be attained.

It has been said that "the more grain we can profitably feed our animals the better we feed the farm and the better the farm will feed us."

Henry Wallace says "that a correct theory of farming requires that the fertility of the land be maintained. This is the farmers capital; not the land itself, but the available and unavailable fertility in the land. The land is only a location for the deposit of fertility and for the support of the farmers' buildings and feed yards. The real worth is in the fertility of the land. The exhaustion of this, inevitable by continuous grain growing, is the exhaustion of the farmers' capital stock. In selling grain we simply sell our land by piece meal, not the profits but the land itself."

The correct theory, therefore, of farming involves not merely grain production, but meat production and meat production primarily because in producing it we are selling our grain in the best market and can thereby keep up the fertility of our farms.

It is not alone a question, whether we can obtain a few cents per bushel more for our corn this year or next by feeding it to stock or selling it to the grain dealers, but we must take into consideration the condition of our farms ten or fifteen years hence, and decide whether we can afford to rob our soil, even for one year, by sending away any of the elements of fertility except in the most concentrated form.

To obtain good prices for products in this country of magnificent distances and consequently costly transportation, our products must be concentrated to the minimum of condensed form, such as beef, pork, mutton, butter and cheese.

The feeding of stock presents to us a market for our products, a better market than the market at the elevator, because when we feed stock we sell economically. We get the market price for the product and then have left with us upon the farm 75 to 92 per cent of the value of this product in the form of fertilizers, to put upon our fields and to maintain the fertility of our farms.

There is, therefore, much in the question of breeding and feeding stock to be taken into account, which is perhaps overlooked and not generally considered.

The wonderful natural fertility of our Illinois prairies can not long be maintained under the present system of robbing the soil. By the constant growing of grain and selling it our farms, no matter how fertile or productive, becomes in time impoverished and run down.

The cream is taken from the land and sold in the shape of wheat, corn, oats or other products. Stock growing improves our farms, keeps them in better heart and brings them to a high state of fertility.

Manure is the great life supporter and promoter of the soil and the time is coming when we will be compelled to keep stock largely for the purpose of producing manure if we wish to attain success in farming.

The consideration of the subject of the stock interests of Illinois is, therefore, a most important one, not only in itself but in its relation to the general farm economy.

It implies a great deal more than is ordinarily attached to the subject. The important and vital question that now confronts the farmers of Illinois is, shall we go on and further impoverish and exhaust our soil by the continuous cropping and sending of the grain to market or shall we engage in stock raising and feeding, and stop the flow of that golden stream flowing outward from our prairies in the live stock foods that we fail to consume. While we would rejoice to see the live stock interests of the great State of Illinois grow and expand to the extent its unsurpassed fertility and resources entitle it, we want to see that development based upon something more than the mere fact that corn can now be fed to hogs or steers with a fair margin of profit, for just so soon as that apparent profit fails to materialize will the business decline and be abandoned.

We would like to impress upon the farmers of Illinois the absolute necessity of making some form of stock raising the basis and foundation of all farm operations, that instead of going out of the business when a depression comes they will seek for cheaper and better methods of rearing and feeding stock, that they will make the occasion the necessity for careful study, and instead of changing from one class of stock to another or abandoning the business altogether, they will put forth the necessary effort to meet the changed conditions. We would like to see our farmers so wedded to the stock interests that when adversity comes it will only serve to make them think carefully and act energetically.

Long and painstaking efforts in any one direction make men experts, but not until the Illinois farmers rightly appreciate the value and necessity of the stock business, in its relation to the preservation of fertility, will he become an expert in this line or capable of getting out of it all there is in it.

It has well been said "that the policy which the farmers of Illinois must adopt if they ever expect to attain their former prosperity, and reach out for that degree of prosperity which our unexcelled natural advantages intend we should secure, is to provide a home market for our crude products."

By home market we do not mean a market in the eastern cities or the cities of Illinois, but the market on the farm, a market for corn, oats, hay and grass on the farm on which they grew, without any cost of transportation except that which the farmer pays to himself for the use of his own teams and wagons.

Nothing except live stock can provide this kind of a market. The demand is now for more consumers, more "condensing factories" represented by good feeding cattle, sheep and swine, and less corn.

There must be live stock to assist in keeping up the fertility of the soil, to facilitate the proper rotation of crops, to furnish a home market that will enable us to use, to the best advantage and at the least expense for transportation, our grain, hay, corn fodder and other roughness, and in the end to condense freight tonnage to the minimum. Live stock of some kind or in some form is an absolute necessity on every well conducted farm in Illinois today. We do not urge it as a popular fad or so much as a paying investment in itself, but as the basis and foundation of permanent and successful farming.

In entering upon the business of stock raising and feeding there should be a definite object and aim in view and a full knowledge as to the purpose for which the animal is to be used.

When that point is determined the breed should be selected best adapted to the purpose intended and then a steady pushing forward to the accomplishment of that object, neither turning to the right nor to the left and never making the mistake of trying to make butter with beef animals or beef with butter animals, but always breed and feed for a purpose.

The secret of successful breeding and feeding of stock is said to be contained in three words, blood, feed and comfort.

There must be a good foundation on which to build. There must be good and proper material to maintain and erect the structure.

There must be comfort for the animal, in order that the material used may be utilized to its fullest extent, for the growth and perfection of the body.

It would not seem to be difficult to comply with these conditions, yet a glance at the majority of our feed lots will reveal the fact that comfortable quarters and good blooded feeding animals are far from numerous, and that in most cases there is a mighty poor outlook and foundation on which to make toppers for the market.

Even at the risk of a repetition of an oft-told tale, we feel moved to recur to the vital importance of paying greater attention to the breeding and feeding of good stock. There can be no economy in feeding poor and inferior stock of any kind.

The difference in profitableness between the use of good feeders and poor ones is so considerable that while the former generally pay the latter generally lose money; and it is only by greater care and breeding of the better sort that the growers and feeders of stock can hope to make a profit.

It has well been said that the farmer who is feeding corn to a bunch of steers, one-half of which are ill formed and the other half well formed, is selling his corn to two buyers, one of which gives him from 50 to 100 per cent more than the other. He would not make this mistake if he were selling his corn to the merchant. If there was two buyers in the same town and one gave one cent a bushel more than the other, the highest bidder would get it.

The greatest drawback to the stock-growing interests of Illinois is a lack of quality. A good foundation on which to build, and the attempt to do with poor and inferior stock that which can only be accomplished with the best.

If the steer is not of the right quality or a good kind and is not predestined and foreordained to put his gain on in the place where it brings the most money, no amount of care and feeding can induce him to do so, and what is true of cattle is true of all kinds of stock.

He who would sell his grain to a good customer must not expect to find that customer in the shape of a poor bunch of cattle or other stock no matter what their promises may be, and no matter what their gains may be as compared with better stuff. He may feed his grain to steers that will bring him 5½ cents a pound on the present market, and he can feed it to a bunch of steers that will bring him less than 4 cents, and the one bunch may make as many pounds of gain as the other. In the one case he sells at a profit because he has a good customer, and in the other case he sells at no profit, or perhaps at a loss, because he is feeding his corn to the wrong kind of cattle. It is not so much a question of how many pounds there may be either. The question is as to the character of pounds that are to be made by the feed.

From the farmers' standpoint a fat steer is a manufactured article, and like all other manufacturers his aim should be to produce the article most in demand. The advantage a good grade Angus, Shorthorn or Hereford steer has over a native or scrub is not so much in the gain made from the same quality of food, for experiments have shown that a native will often put on as much gain as a high grade, but the difference lies in the increased value of the fattened grade, which always brings a greater price per pound at the time of selling. He brings a greater price because he has a greater proportion of the valuable butcher cuts. The difference between a scrub and improved stock is mainly a question of where it puts the grain.

The farmers of Illinois must pay more attention to the selection of stock for fattening, and especially steers. They must select steers that show a tendency to a broad loin, a long level rump, a straight back, flank low down and thick, broad thigh extending well down to the hock, and all these should be associated with a mellow velvety skin of medium thickness. This kind of a steer is referred to by Prof. Curtiss as of the general beef form—low, broad, deep, smooth and even, with parallel lines. Such steers will be economical and profitable feeders, and when fattened will bring the top price of the market.

Where and how can such steers be obtained? We answer by breeding and raising them on the farm at home. The idea has been prevalent so long that it does not pay to keep a cow a year just to raise one calf, that it may seem like heresy to even suggest it. Under present conditions and prices the only method of successful and profitable farming is by making the farm self-supporting both as regards the breeding of live stock and the production of food to finish them. The first object is much more difficult to accomplish than the latter. The chief difficulty will be in breeding a sufficient number of cattle to supply the demand, but it can and must be done. All our thoughts and energies should be turned in this direction. We must diminish the cost

of production and improve our methods. In brief, we believe that there is sufficient feed wasted on Illinois farms every year which, if properly utilized, would keep the cows necessary to supply this want.

Illinois is a great corn growing State, and the fodder, as every one knows, is a most valuable feed for stock, but the way in which it is neglected and wasted is most deplorable. One acre of corn fodder properly cured is equal in value for feed to one acre of hay. The number of cows that could be kept on this waste alone in one year would add millions to the wealth of our State. There are other wastes and many ways whereby the raising of our own feeding steers can be made possible and practical. We can not pursue this subject further, but we do desire to enter a more emphatic protest against past practices and the teachings of those who would make us helpless and dependent upon others in the great industry of cattle raising.

The assertion is often made that feeders can be raised on the range and in other sections of the country much cheaper than on the high priced land of Illinois, which is undoubtedly a fact, but wherein is the profit to the Illinois farmers when they can not purchase those feeders at a price anywhere near the cost of production, as has been clearly demonstrated during the past season. They would never be offered us except at prices so high as to make their fattening unprofitable.

The farmer feeders of Illinois must learn to rely upon themselves and become, to a large degree, the growers of their own cattle. Why borrow money at the bank and send it out of the State for feeders? Why pay costly transportation charges? Why purchase poor and inferior stock? When all of the money can be earned and kept at home, better feeders produced and more money made with little or no risk.

The importance of carefully selecting the best individuals of the best strains for breeding purposes can not well be overestimated. The proper feeding and management of live stock is an art which rarely receives the thought and attention its importance demands. Stock feeding in Illinois is often little more than maintaining the animals after some fashion in a haphazard sort of way until they approach the age of maturity or perhaps go past it, when an abundance of corn is placed before them for a few months and they are hurried to market.

The ruling thought and idea is not how well, but how cheaply can the stock be maintained.

The first step in a rational system of feeding is to deal generously with the young growing animals. Experimental investigations and what men of experience have learned all goes to show that at no period is a pound of flesh put on so cheaply as upon the young growing animal.

It is said that the young animal under eighteen months old will make twice the gain on the same feed that he will in the next eighteen. It may be laid down as a principle that to get the most profit out of making beef, the steer should be crowded every day of his life and made into beef as young as possible. It is an undisputed fact that the system of early maturing is the only method by which success may be attained. The stock requires to be maintained in a healthy condition and kept growing steadily from birth to finish.

Prof. Sanborn says "that about two-thirds of the feed eaten by half-grown animals is used for maintenance, hence every day that an animal merely holds his own it is burning the tapes without giving light and therefore using food at a total loss."

Almost all of the philosophy of early maturity in its relation to economy of growth rests in this fact. A four-year-old steer that weighs no more than a two-year old steer has consumed twice the food of maintenance and therefore has consumed a very high ratio of unnecessary food.

Every day that a calf, colt or pig lives without gaining is a day wasted and just that much money lost. Steady, continuous growth from the day the calf is born until it goes to the butcher is what tells. Starving periods play the mischief with profits.

Uncle "Billy" Watson often said to me that it was a saying of his father, Hugh Watson, "Thicken your youngsters the first fifteen months of their lives and they will never give you much trouble afterwards."

The importance of the live stock interests in Illinois, in developing and adding to the wealth and resources of the State, ought to suggest to every stock grower the inquiry whether he in his own efforts to grow stock is making the fullest use of the improved conditions that the progress of improvement would enable him to make, or, in other words, if he is up to date. Any one can shovel out food to stock, but there can be no profit in this sort of feeding.

A closer study of the animals to be fed, a full appreciation of their wants and requirements, and then supplying foods in such quantities as will produce the greatest gains from the least outlay is the only way feeders may expect a profit from their work.

Comfort for the animals is just as essential as good blood and good feed. No animal can thrive and put on flesh unless the conditions surrounding it are favorable, and in most cases these conditions are just what we make them.

Costly barns are not necessary, but all animals require dry and comfortable quarters in which to eat and sleep and shelter from severe cold and storms if the greatest gain and saving would be secured.

The live stock growers of Illinois are compelled by force of circumstances to realize the necessity of feeding the right kind of animals in order to produce a profitable result and they have got to understand the advantages of feeding the right food, in the right way and at the right time in order to produce the desired result. They must comply with the three conditions, good blood, good feed and good care.

There was never a more favorable time in Illinois than the present to engage in any or all of the live stock industries if the farmer will but do it in an intelligent and business-like way.

We do not mean that he should rush into the business, inflated with the idea of making large sums of money, or that he should go out and stock his farm with horses, cattle, sheep or hogs of any kind, or at any price, but that he should first determine to engage in it as a settled, permanent business, for a term of years, lay the foundation in the best blood to be found, avail himself of every "up-to-date" method of feeding and caring for his stock and then gradually grow into it. Let him acquire experience and knowledge as his herds increase. Let him make the stock, the market for everything grown on the farm. Let him save the manure and increase the fertility of the soil. Let him produce and utilize with his stock more grass and cultivate fewer acres. Let him raise his own feeders of better breeding and better quality and by doing everything so far as possible within himself freed from all charges of middlemen and the expenses of transportation, adopt the safe and conservative business of breeding and feeding stock, and by so doing bring our grand old State back to its former standing as a stock-growing State and lay the foundation of a permanent and paying business.

The unsurpassed natural advantages of Illinois have designated it as the greatest stock-growing State in the Union. The unequalled fertility of its soil, the growth and perfection of its corn, grains, grasses and all of the needed stock foods, are not excelled by any country on the globe.

There is no reason why we should not become preëminently noted for the number and quality of our herds of fine stock, or why our herds of pure bred cattle, horses, sheep and hogs should not make Illinois the Mecca for the breeders of fine stock from every state and section of this broad land.

The object is most inspiring and grand; the possibilities incalculable and the accomplishment lacks only a higher appreciation of the splendid opportunities and possibilities within our reach.

The Chair—You will now have the pleasure of listening to an address by Mr. Ralph Allen, of Delevan, Illinois, on the topic "Farm Dairying."

Mr. Allen read as follows:

FARM DAIRYING.

Under favorable circumstances and rightly managed there is money in farm dairying.

To carry on the business there needs to be employed an abundance of labor of an intelligent quality.

It takes about twice as much labor to carry on a dairy farm as it does either grass or stock farm of the same size; and while on any kind of a farm there is ample opportunity for study there is on the dairy farm an almost unlimited sphere for the application of mental work, for its routine not only includes crop growing and animal husbandry but in the feeding of crops there is a daily response by the animals which is most delicate in its character showing effects of feeds or conditions which would be imperceptible in the case of animals fed for other purposes than making milk.

Much of the work on a dairy farm is the same from day to day the year round. There are no idle days and to this may be attributed much of its financial success.

As to locality a dairy farm is well located when near a good market or near an express office which makes close connections with a large city, especially a city made up of manufacturing industries. I have often noticed that among our western towns those were the poorest butter markets whose inhabitants were made up largely of the families of retired farmers and which are situated in the midst of rich agricultural lands.

In such towns too many of its people keep cows of their own and competition is too great among the nearby farmers.

The dairy farm itself should possess good grazing, should have enough tillable land to grow the necessary feed and have an unlimited supply of good water.

As to the kind of dairy business it pays best where possible to supply a special cream trade, next a retail milk trade is perhaps the most profitable.

But the number of dairies which can sell cream and milk to the retail trade is very limited as compared with the number which must depend upon butter as their specialty.

My ideal dairy farm is one which derives its income from the sale of three products, butter, cattle and hogs; each of these three products are the natural output of the dairy business.

For if cattle are kept on the farm it follows that butter may be made. If butter is made there is a constant demand for cattle; this demand can best be supplied with home grown animals, and home grown animals are most cheaply reared on farms where butter is made, and hogs come in as waste savers, picking up the waste from both cattle and dairy, the waste from the cattle supplying those elements of food which are deficient in the waste from the dairy.

The manufacture of butter is an industry in itself when rightly conducted; there should be conveniently located on the farm a building fitted up for a creamery. It should be furnished with a steam engine, a cream separator or a tank for deep setting, cans of milk, a churn, butter worker, milk tester and the many other minor articles always needed. It also should be provided with a water system and some means of cold storage. It pays to have an up-to-date outfit.

This machinery, as well as the means of keeping the whole apparatus clean, should be conveniently arranged so as to economize time. It does not pay to carry on the business on a scale too small to keep the machinery moving every day. I do not think it pays a man to spend his time running a dairy

with less than twelve or fourteen cows, and a larger number will usually pay better. But, like most other farming operations, the work becomes unprofitable if it becomes too extensive.

Probably the most economically conducted dairies are those containing from thirty to forty cows. If it is desirable to increase the business to a much larger number of cows, it would probably be better to divide the herd on two different farms, because cows do not thrive well in unusually large numbers, but this division would make the business more on the order of a coöperative creamery than a farm dairy.

In the manufacture and sale of butter it pays best to use such implements as practically get all the cream out of the milk and all of the butter out of the cream, as well as make the finest quality of butter. The two methods of getting cream from the milk are by the deep setting process and the separator, each have their advantages. In a large business the separator is undoubtedly the best machine to use. In a farm dairy where there is an abundance of cold water the deep setting process can be used to very good advantage. Fifteen years ago it was the only process in use.

With proper care to have the milk cooled as soon as it is taken from the cows to as low a temperature as well water, and with care in skimming that none of the cream runs into the skim milk, there will be but little fat lost by the deep setting process, and I always thought the little fat that was left in the skim milk was well paid for by the calves that drank it.

The cream should be allowed to ripen for a period of twenty-four hours. In doing this a jacketed can with which the temperature may be controlled, is very useful. All the cream to be ripened should be placed in this can at the same time and brought to a temperature a little above that of churning. During cold weather if cream does not ripen readily it may be warmed to eighty-five or ninety degrees.

The flavor of the butter depends to a great extent on this process of cream ripening. The churning should be done in the lowest temperature at which the fat will separate from the cream.

Churning at high temperature usually results in loss of butter fat and a poorer quality of butter.

A reputation for making a choice grade of butter goes a long way toward making the business a success.

The sale of cattle from the dairy farm can be made a very respectable source of income.

In a butter dairy all the skim milk may be used for raising calves and the amount of skim milk produced in such a dairy is easily sufficient to raise all the calves that are born in it and as far as quality is concerned the calves that are raised on skim milk will make as good or better cows than those raised on new milk or allowed to run with the cows. As a rule they are more docile and better milkers. On a completely stocked dairy farm the young female stock should number twice the number of cows in milk. That is if there is kept twenty cows in milk there should be twenty heifers under two years old and twenty heifers under one year old with the heifers coming into milk at two years of age there would then be born annually twice the number of calves as there are cows regularly in milk, and from a dairy of twenty cows there would therefore be for sale forty head of cattle each year. Practically the number of cattle sold each year would be about eighty per cent of the theoretical number. On farms where the calves are grown to maturity their annual sale will net a very respectable income to the dairy farmer, especially if the herd is composed of animals of high quality. It costs from twenty to twenty-five dollars to raise a calf until it is old enough to fill a place in the dairy and as good cows usually sell for much more than that there is a good profit in growing them.

In raising calves they should be started on new milk. After a week or two depending on their thrift they may be fed one feed per day of skim milk. The calves ought then to be taught to eat shelled corn. As soon as they eat corn freely they are ready for a full skim milk diet. I think shelled corn and skim milk is the best substitute for new milk in raising calves. After the

calves have learned to eat hay there is very little trouble to raise them. Still there is one point that is likely to be overlooked, especially while the calves are young. That is that they should have an abundance of water. Calves will thrive better on a half ration of milk and plenty of water than on a full ration of milk and no water. Milk is a food and can not take the place of water for animals old enough to live partly on grain and hay. A good way to warm milk for the calves is to pour hot water into it. I am a firm believer that the best kind of cattle for the dairy farmer are the pure bred dairy breeds. I have owned a good many grade cows and found very few that were the equals of the pure bred dairy cattle. In starting a herd it is a good plan to purchase as many pure breds as may be offered, with the idea of making them the foundation stock of the future herd.

The place of the pig on the dairy farm is that of a waste saver. His principal source of food as derived from the dairy is the buttermilk and cow droppings. Pigs fed all the buttermilk they want together with all the corn they will eat will, without any other food, easily weigh from 175 pounds to 200 pounds at six months old. When the cows are fed shelled or ear corn the amount which is undigested is sufficient to supply one pig per cow with all the corn the pig needs, so that this undigested corn, together with the buttermilk a cow will make, will easily produce one pound of pork per day per cow. It is better not to allow any more pigs to run with the herd than the cows can keep well supplied with feed, for if the pigs become too hungry they are apt to disturb the cows.

A well conducted dairy farm ought to produce all the feed that is needed to support its live stock, and the number of live stock kept on the farm ought to conform to the amount of feed annually produced. Where all the feed grown is devoted to the dairy, I think that from twenty to twenty-four cows with the young cattle can be successfully supported on a 160 acre farm of average Illinois land, and this number can probably be increased as the business progresses, for by the practice of feeding all the products of the farm and of returning to the soil the large amount of manure necessarily produced by such a system, will result in gradually increasing the fertility and productiveness of the farm.

Fortunately those crops for which the soil and climate of Illinois are best adapted are not only those which alternate with each other best in their culture, but are also those which make one of the best combinations of feed for dairy animals. These are corn, oats and clover. These three are the surest and largest yielding crops that Illinois produces.

In a system of rotation composed of two crops of corn, one of oats and one of clover, these three form a combination which is just about right as far as convenience of cultivation and fertility of the land is concerned and in these three crops the dairy farmer will find the foundation of the best balanced and most profitable ration for making good rich milk and high flavored butter.

A great deal may be said in favor of feeding corn and oats whole or unground. The cost of grinding is a heavy expense in preparing the feed and larger quantities of feed can be stored for a longer time without heating or becoming musty. The cows' digestive organs are less liable to become disordered, and while perhaps more grain passes through the animal undigested when whole grain is fed, there is however a great deal undigested when meal is fed, more so, perhaps, than we think because it is seldom noticed.

This undigested meal is lost as far as its feeding value is concerned, but when whole grain is fed the undigested part may be gathered up by hogs or poultry. As a matter of profit I think I have made the most money during the times when I have fed whole grain.

Other crops that may be grown to advantage are sorghum and beets.

The best use for sorghum is to supplement the pastures during dry weather unlike most other growers. I prefer to raise large well developed stalks such as is grown for molasses. I like large stalks best because they are sweeter and contain proportionately less hard outside fiber. When these are run through a feed cutter in from two to three inch lengths they make a feed that the cows relish better than any thing else in the season.

In providing shelter we should consider what the cow wants and not what we think she ought to want. In seeking shelter a cow strives to get out of a cold wind and when she lies down she selects a dry, soft bed. She likes the sunshine in winter and occasional shade in summer, but except in cases of great extremes she seems indifferent to heat or cold.

The best preparation for winter that can be given a cow is the same that nature uses in preparing other animals for that season of the year, that is the storing of fat within the body and growing an extra outside covering; fat and fur are nonconductors of heat and cold, and an animal that is well covered with a good thick coating of hair and this coat lined with a thick layer of fat is in a condition to be quite insensible to a low outside temperature. This condition is best brought about by liberal feeding and out-door life during the autumn months and it is quite probable that this fat laid on in the autumn is frequently transferred to the udder and made into butter fat when the weather becomes warm and grass starts in the spring, so that this warmth retaining tissue may be doubly paid for.

My earlier methods of fastening cows was to tie them in stalls with chains, but the cows would get dirty and would also move about too much while being milked. Then I fastened them in stanchions, which kept the cows clean and they stood better while being milked, but were too uncomfortable. I finally adopted the plan of not confining them at all except while feeding and milking. I let them run loose in a square shed inclosed on four sides, one door of which should be constantly open. The sides of the shed should be at least eight feet high and built wind tight and should also contain windows enough to thoroughly light the inside. If the roof has a good pitch and there is no loft in it the building will contain plenty of fresh air. Cows need fresh air and will have it if they can get it. A good many people think the boss cow stands in the door for pure meanness, but it may be she stands there because it is the best place, she can be sheltered and yet have good air.

The floor of the shed should be covered each week with a thick layer of straw and a few small pigs allowed to run with the cows, which will keep the manure worked down in the straw.

This way of keeping the cows at night does away with the daily labor of cleaning the stable and the cows are as clean as in summer time on pasture. The cows inflict fewer injuries on each other and there is less liability of accidents by fire or loose cattle getting among those that are tied, and the plan greatly reduces the running expenses of the farm.

There is one other part of this business that is necessary to its success. It is the same old story that is told of every other industry. There must be a good manager. It needs a man who is seldom detracted from his duties by outside influences. His whole thought must be in his business. He needs to know not only the management of milk and the principles of butter making and how to dispose of it; he must also know the composition of foods, how to balance rations, the rules of hygiene, the importance of punctuality in milking, feeding and watering, the rules of cleanliness and animal comfort, the care of the sick and the prevention of disease. He should know how to communicate with his animals to get their ideas and learn their wants. Health has its symptoms as well as disease; they express the wants for food, for drink, for shelter, rest, air, exercise, company; many other wants peculiar to animals in health.

The manager needs to know how to grow, harvest and preserve the different kinds of cattle foods, but men who possess such abilities are rare, in fact I often doubt if the man exists who is fully capable of managing a farm dairy as it ought to be managed.

Mr. Fred Hatch, of Spring Grove, Illinois, addressed the Institute on "How to Increase the Interest in Fine Stock," as follows:

Mr. Chairman, Ladies and Gentlemen:—Don Quixote is represented as becoming so infatuated with the books on knight errantry that he passed whole days and nights with this kind of study, and thus with little sleeping and much reading his brains were dried up and his intellect became deranged.

In this condition he imagined himself called upon to go forth on his now renowned steed Rosinante, accompanied by his good squire Sancho Panza, to right wrongs and redress evils. You all know of his crazy adventures and many buffetings.

On receiving an invitation to read a paper on some subject pertaining to live stock before this institute I took a retrospect of twenty-five years and discovered that I was a veritable Don Quixote at that time on the subject of pure bred stock, but my many crazy adventures and my many, many buffetings during a quarter of a century engaged in stock raising has brought me, I think, to my senses.

Don Quixote came to his in less time, besides he was noted even during his wildest spells for giving his squire the very best of advice. Hoping that I may do as well by you as Don Quixote by his squire, I give you a few thoughts.

The era of the remarkable improvement of domestic animals opened with our century, and the most marvelous progress has occurred during the last thirty years, and it may be stated as a plain fact, without boasting, that no other country has stimulated the improvement of the world's live stock industry with as much effect as America. She always wanted the best whether it was a sheep from Great Britain or a horse from France. We have drawn freely on the skill of foreign breeders, and in some ways have added to the superiority of the product. High water mark has been reached in flushing foreign channels, and bankers and city farmers—fancy farmers as we farmers are apt to call them—no longer seem willing to spend their thousands to boom their particular pets.

Dull times and depressed monetary conditions and low prices have lessened the interest in pure bred stock. How to increase this interest is the great desideratum. What are its supports? As generally recognized, they are the live stock associations, the agricultural press, the experiment stations, the agricultural colleges, and the Farmers' Institutes, but its chief pillar of support, yes, its very foundation, is the breeder himself. He must first of all have a genuine affection for highly perfected specimens of the animal kingdom and enjoy their companionship whether the world stops to inquire about them or not. Call this sentiment if you will and scoff at the idea that stockmen are moved by other than selfish motives in carrying on their breeding operations. We know it to be a fact that if this one element of sentiment, an inborn love of good animals and a deep seated attachment for a stock long maintained on the same farm, had not been a ruling factor in the field of American stock breeding during the last five years, we should not now have so strong and determined a set of men in the stock breeding ranks.

The breeder must be so live that his life and work will be worthy of imitation and excite the emulation of every tiller of the soil. He must spend his life in devotion to his stock, not merely as a business, but as a profession. He must love his occupation; it must be the inspiration to him of a noble calling. He must stand firm in the day of adversity and refuse point blank to be divorced from a vocation which in times of prosperity yields a handsome profit, and which at all times returns him some dividends in the shape of pleasure and satisfaction.

Breeders have been known to boast that they never made a cent out of the farmer market, and it is a half truth that throws a light on their weakest support and one that ought and can be made their strongest. Good stock is always in demand, and buyers will be found among farmers if only they have faith in the breeder and his calling.

In that wonderful book, "Tom Brown of Oxford," he (Tom) astonished his fellows by declaring that England had become a nation of hucksters. Let us not as breeders of pure bred stock become mere traders, but rather benefactors, and so conduct ourselves and our business as to merit the trust.

Let us as citizens of intelligence and character awaken to the necessity of individual as well as concerted action to encourage the preservation of the breeds of live stock that have proved most profitable and useful to the general farmer. The farmer should be informed as to the direct money value of

good blood in the Chicago market, whether it is in horses, cattle, sheep or swine; and there is no doubt but that such information collected throughout the year would add to the strength of the interest in good stock.

How to make men more desirous of and interested in good stock is of much importance and to do this we must weed our stock and never sell an inferior animal for breeding purposes at any price. This will beget confidence. We must so amend our registries and rules of registry that no inferior animal can be entered therein. Then our agriculture papers will not be asked for space for articles with such titles as the following: "That Advanced Registry," "Against Pedigreed Scrubs," "Practicability of Maintaining Stock Registers," "Let Us have a Double Standard," &c., &c.

The register should be a guaranty that the animal is good as well as the pedigree.

We must convince the farmer of the superiority of our animals rather than the superiority of their breeding. We must convince him of the fact that scrub stock is the most expensive luxury by far the farmers of Illinois have today, and that they cost them more than all the monopolists together can ever hope to wring out of them. Scrub stock is the leech that sucks away at their prosperity three hundred and sixty-five days in the year and we must convince the farmer of the existence of this leech. This can be done only by constantly keeping before his eyes perfection of form according to its kind and its money value in the markets, and this should be the aim of every breeder who aspires to success and profit in his pursuit.

We consider loud advertising and boom prices detrimental to the interest of fine stock breeding. You will think I have generalized too much and offered remedies applicable to the whole country, and want specifics for Illinois. Perhaps I have. But the farmers of Illinois are rather more than a fair average of the farmers of the Republic. Quote Draper: "The people of Illinois are not fools, but are discriminating, and are going where they can get the best." And I am sure they will be among the first to recognize and adopt a good thing.

Much can be done by perfected State organizations of breeders, much can be done through the agricultural press of the State, and much can be done through the College and Institute; but with the breeder rests the burden at last; if he be not equal or superior to those of other states he will not gain the palm of victory, for only the best will excite the interest and bring the popularity that good husbandry on our broad green fields is entitled to.

Our improved type of stock is one of the grandest products of the skill of man acting on and moulding the gifts of God in creation.

It is wrong to despair of the Republic is an old Roman sentiment which we have adopted with zeal.

Things that are worthy must not be lightly abandoned or suffered to decline.

Illinois is not only the equal but the peer of any of our sister states in the breeding of good stock. Let us forge to the front with her great herds and flocks at her own and neighboring state fairs and let not her breeders miss the most insignificant county fair but see to it that good representatives of the leading breeds are on exhibition, thus giving a great lesson to thousands of farmers who attend these fairs to look with pride and interest at his neighbor's stock. It puts him to thinking that he might have some as good. It means a new life to the farmer and his family.

The Chair:—The next address will be made by Mr. C. C. Mills, of Decatur, Illinois, on "The Farm Telephone,"

Mr. Mills read as follows:

Mr. Chairman, Ladies and Gentlemen:—The whirl of business life has carried us on to improvements and everywhere we see a tendency to concentrate all effort toward accomplishing the most in the least possible time. In the cities the best improvement is given the streets; the old horse-cars have given way to the rapid going electric car; commercial centres are constantly

shortening the distance between them by the aid of fast freight and passenger service, insuring rapid distribution and convenience; large department stores find favor with the public and the "cash boy" becomes too slow in movement for the anxious and nervous public and pneumatic tubes and other convenient and rapid devices force themselves into use; a switch is turned and a whole city is lighted up instantly for the commercial world and light laborer and traveller; hundreds of wires hang overhead in the streets and the whole enterprise of the city is connected by telephone by which thousands of dollars of business is transacted every day; on the farm, speed and facilitation in work has been marked also, and the fields are drained, the crops rotated, the machinery improved and made to do both more and better work, and cultivation becomes more extensive and intensive. These are but the results of the advancement of the ages and are in keeping with the times, a necessity and we call it progress. It is progress and what has been developed in our time only makes us wonder what will be the result obtained in a like time extending into the future. If indeed the farmer has been slower in taking up the lines of progress than his city brother it is largely on account of circumstances which make it almost necessary or a lack of circumstances which make it compulsory. Different conditions of competition make it less compulsory for him to adopt some improvements which the city business man must have. The present is indeed but the building of the past and we are the builders of the present and from this present will develop the architectural structure of the future, the "to be" present. Progress has been the object, the one incentive, through all time and step by step one person, precinct or locality has led the way only to make it necessary for others to follow in quick succession, and in turn produce conditions calling for still further advancement along the same lines or the adoption of new methods or be left hopelessly behind in the race. Quick communication between any and all parts of the world has for years been establishing and perfecting itself. First the telegraph and then the telephone, that great modern talk reproducing invention has changed the aspect almost of living both with points far removed as well as contiguous ones. Large commercial centers were connected everywhere with smaller ones and the professional man, men of rank, men of means and stock manipulators felt the strengthening throb as they realized the close relationship and the easy reach in which they were brought with their supply and their source of income, of trade and of speculation. The producers, the farmers and business men of the smaller towns and rural districts derived some knowledge, some little information and some benefit from these it is true. It came from the nearest railroad town; it came by the daily newspapers; it came by hearsay far removed. In other words it came by absorption, as it were. Even the means of direct communication if one found it necessary with a large business center is miles away from the average farmer and perhaps a half-days drive to it. Almost every railroad town is supplied with that indispensable convenience, the telegraph, but one can not farm in town and but a comparative few can own farms next adjoining town even. From this source of quick information then he must ordinarily content himself with absorbing what has come in the way of news and facts in any way he can get it. As the cuticle which covers the body has no direct blood supply and no circulation through it but receives its life, its nourishment, by absorption from the source next to or beneath it which is supplied with blood vessels and capillaries, so with these rural districts, or if you please, the farm districts, which lie next to or away from these central points for trunk lines of telegraph and telephone communication which convey the news facts upon which much of the business of the day is based to the local telegraph point and then by absorption from ear to ear, from neighbor to neighbor it goes. It gets there but renders us possibly a little late for advantage in the competitive field.

Let enterprise and progress supply the remedy. Build from this center of communication by telegraph a telephone line; yes, a "farm telephone" line, and to our rural district carry the life, the pulse, the very blood of commerce, and news and knowledge even to the periphery as we stretch along the highway the conveyor of the magic wave, yes, indeed, a network of these wires, the directors of our sound wave, as they come from every farm

house and village store where in natural tones we can converse and transact business with our neighbor or city merchant or anybody and be but a moment behind our "good samaritan" city business brother who, perchance, with his quick and rapidly gained knowledge, may have feigned to do us a kindness one day only to make us feel later that it were better if he had passed by on the other side. Equal distribution of knowledge of important data are just as essential to honest and legitimate trade, value received, up to date, and no chance game, as equal distribution of products and of money are absolutely essential to prosperity. It is the thinking man who in the broadest sense is the most successful and to think he must have a basis from which to evolve his thought, and these are the data which quick news transit furnish and give the thinking man a chance for thought on the effect of existing conditions before the results are beyond his reach.

We have many rural districts which are miles away from a railroad or telegraph line or good supply store and especially at some times of the year communication is very slow if not almost impossible, as made necessary from ordinary causes, and yet these are among the most fertile agricultural sections of our Prairie State, are almost boundless in resources. Our city cousins look upon our country homes as isolated, and indeed they are in one sense, yet we extend our telephone system into these parts and we remove the objection largely while we intensify and multiply our advantages over the city in freedom and surroundings. With the telephone if the farmer wants the local markets from his neighboring towns he brings not only the buyers of one town but perhaps of several towns into close competition and stimulates that which is said to be the life of trade. Does he want the close of the Chicago market? the telephone will bring his answer. Does he want the exact time from any cause, even to that of locating the noon hour or the time of rising for the benefit of his wife? his watch may be set according to Washington standard time daily. Does he need repairs of any sort, from a bolt to a complete new farm machine? the telephone is at his service and will make known the need in a twinkling and the next sage or a passing neighbor will deliver it at his door. Does the good wife need an addition to her pantry stores and the busy man too busy to go after it? our little talking machine makes glad the heart of the village grocer and the goods will be delivered when the wagon comes the next morning. Does he need the family physician? night or day as quick as the telegraph and with more precision and satisfaction the call will go to him. Does he need legal counsel? his lawyer will advise with him over the wire. Are you or your friend in trouble away from home? the 'phone will carry the information from the telegraph instrument to your own household. Do you have business with your neighbor in threshing, harvesting or any other time or on busy or stormy days? by your fireside the "farm telephone" is ready to do your service. Do you want anything or even like to be sociable? then call up anybody far or near, for all have become your near neighbors with the telephone.

But where is the farmer who reads, who sees, who thinks, and is sensible who does not know that the telephone would be of service to him in numberless ways and in most of them prove many times to be invaluable if he only had it; but the cost, the arrangement, in fact the getting it is the rub. We have here simply a condition where circumstances have not been such as to force or make practical its use in the country at such expense as has been necessary in past years for its introduction, but which competition in the city as well as universal convenience has compelled. The density of the population of our cities makes them attractive for stock and incorporated companies, while they can not afford to operate, nor farmers can not afford to have them operate in their districts at prices often charged. We have conceded the telephone to be a wonderful convenience and we want it, yet still the cost of constructing and fitting out and the circumstances surrounding the community, considering the advantages to be gained, may be out of the reach of some. However we can have telephones today at a moderate cost where but a few years ago it was very expensive or impossible to have them.

We are not here, let it be understood, to pose as an electrician, nor to discuss the telephone from a scientific or mechanical point of view, far from it.

We have not made sufficient study of the question for this, nor do we believe such a discussion would be pertinent before a meeting of this kind. Nor can we say exactly what the cost of construction may be, as this necessarily varies with the locality and the quality of material used. Let it be understood then that we speak in general terms and of rough estimates from practical experience in the construction and arrangement of strictly "farm telephone" lines, and there are those here who are using those same lines, and others here have talked over them and still others who have seen them. The telephone interests are developing marvelously rapid everywhere and more and more independent companies are beginning to manufacture telephones whose goods can be bought outright without the high rentals and exorbitant royalties claimed by the original holders of the much talked of "Berliner patent." We are assured that with telephones, as with anything else, it pays to get a good article at a little greater first cost than to get a bill of expense and an annoying contrivance. Many telephones of all grades and prices are being put upon the market but the cheapest can not be the best. Again, there is still marked contention in the telephone field between the old company and the new and independent companies, and the feeling at times is a little nervous over the result of this battle for supremacy, and though there is but little doubt now as to the rights of most of the independent companies' instruments, it is well in buying to patronize such companies as guarantee to defend any suit brought against the user for patent infringement. This may amount to but little, but we are less likely to have trouble if a strong company of manufacturers are at the back of us to fight it rather than an individual against the old companies' thousands. We would advise getting good phones of a good company at reasonable prices, for not necessarily the highest priced instruments are the most practical for our use. We would further suggest that arrangements can be made by which a very good quality of phone could be purchased at from ten to fifteen dollars according to the grade and finish desired. Durability and workmanship increase somewhat with the highest priced instruments but probably not in proportion after a certain limit of perfection.

As regards starting a "Farm Telephone" line we would say that if you are within reach of a good, well organized, well equipped company that is doing the fair thing and has the subscribers who you wish to reach do not attempt to build another system, but even at a little greater cost to yourself let them take care of you, as you will be saved much work and bother which you will count more than expense. A few may be so situated, but by far the larger number have not such an opportunity, and the mutual system may become necessary to have one at all. Of course it will take work to insure success and perhaps somebody will have to do a good deal for which he will not receive very large pay in money, but the necessity of the case will demand that the work be furthered for a mutual benefit and a common good in getting our system started. There can be no rules laid down to follow in working up a line or system. At least two ways have been tried in our State and have proven, in their formative period at least, sufficiently successful and satisfactory to insure their permanency. One is by organizing a company and putting in telephone lines for subscribers at so much a month or year, and the other, perhaps the general method, is for each party or group of parties to construct their own lines, buy their own phones, and mutually agree to help support the line, and in conjunction with other lines maintain a switch board or exchange, with an attendant. The management of public lines, exchange, &c., being vested in a board of directors. All we can say further in this particular is, study well your conditions, the probabilities of development, the financial outlay, and act cautiously, and we will almost guarantee that no one connecting with the service will be willing to give it up for twice what it cost him.

The telephone is a delicate instrument and must, in accomplishing its purpose, respond to slight exciting conditions, and hence is easily affected by outside influences, and is by no means a plaything. We need, therefore, at least some one with a little general and practical knowledge of the mechanism of the telephone to keep adjusted all instruments, lines and switch boards, etc. But for a little farm exchange such as we will have, the practical part is about all that is necessary, which can soon be learned by a little study, and

the system kept in line with certain essential laws, insuring complete and unobstructed circuits with as little resistance as possible. In constructing a system either the grounded circuit or the metallic circuit may be used, but for general farm purposes, away from all strong outside electric influences, such as the electric light or street railway circuits and multitudinous telegraph lines, the grounded circuit is sufficient and least expensive, as it requires only one wire where the other has two and insulation and supports in proportion. The interference, commonly known as "cross-talk," it is true, will be much greater with the grounded circuit than with the metallic, but the difficulty therefrom is not so great as to make it altogether advisable to add the cost of the metallic circuit system. We may remark here also that on either system the phones on the party or toll-line system may be arranged in multiple or in series and each party is called up by a series of definite and distinct rings. The party line makes the cost to each one less and is quite satisfactory, although of course sometimes becomes a little trying to those who have to wait. But to those who can not wait lies the alternative of having a separate and distinct line to the exchange, as he then simply pays a little to save his nerves. In working up a system we would strongly advise that not more than three or four at most be associated on one party line and those by mutual consent to insure satisfaction and preserve congenial feelings if somebody should ring up for the doctor in the dead of night and rouse you from your slumbers in no happy mood only to make you dream of perdition as soon as slumber overtakes you. The most approved method of arrangement of instruments on party lines, according to our best telephone experts, is that of the "Bridging System," and while we can not discuss this phase of construction in this paper it may briefly be said to be that of bridging in by a special device of all phones on a party line by the multiple system and it will accommodate, it is said, as high as forty telephone instruments on one line, but not more than one conversation can be carried on over this line at a given time. This may be studied into or discussed further if desired. We leave it here.

Now first of all be sure you want the telephone line and then use systematic ends to get it and go ahead. If you wait for all to get ready at once you will never get your system, but if once properly organized and instituted others will follow as fast as arrangements can be perfected to accommodate them.

May I describe here very briefly the inception of the "farm telephone" system in which I myself have been connected and am most interested in, and with which I am better acquainted than with any other of the few farm telephone systems in the State. In Putnam county lies a section of the best farm land in the State, or in the world, but there is no railroad in the entire county except across one little corner, and no railroad station whatever nearer than from seven to ten miles of the locality in question. It was here that a little family telephone line was constructed of $1\frac{3}{4}$ miles in length, and it was not yet done when others became interested, offering good support if it might be carried this $7\frac{1}{2}$ miles farther, and thus give to the country an outlet to and inlet from the telegraphic market news and local changes. For a few weeks nothing was done but thinking and talking and then an informal company was organized to take the initiative, and pledging the cost of the line in six weeks or two months the line was formally opened. Now the promoters who at first had thought to be content by having a neighbor with a telephone concludes he must have one in his house, and all had them. It was conceded a success, and first one and then another became satisfied of its practicability and faster than the telephone novices could handle them additions were made to the number of subscribers. The first switch board at once became inadequate and another and higher grade was purchased.

Simply as an instance do we mention our method and do not insist that it is the only, nor yet the best, method of arrangement possible. The company bought the switch board and planted the public lines and took charge of the trunk lines of poles leading to the exchange. If subscribers desired to furnish and set poles, they were allowed to do so and the company bought them, only deducting a rental fee of ten cents for each pole for subscribers' own use. If another party now came in over the same line of poles from

that direction he in turn paid ten cents a pole for each pole used, and thus the company carried part or most of the expense, as the case might be, until the system was developed and enough parties had paid their rentals to pay out on the lines of poles so constructed. Options on all connecting lines of poles were held at a certain fixed price, but the company was not obligated to take them beyond where it deemed advisable. Each and every party desiring connection through the switch board paid a connecting fee of \$5.00 for his drop if on a party line, or \$10.00 for exclusive use of drop if on an individual line. The exchange was located in a private house and a fee of not to exceed \$7.50 per year was to be paid by each subscriber for exchange expenses. The company guaranteed to subscribers the permanency of the system for five years. Neighboring systems were installed on all sides on the same or slightly different plans and arrangements made for a line to be connected from one central office to another and free interchange of talk for subscribers of one through that of the other systems and *vice versa*. Such was our principle for building up what we now deem an indispensable convenience at as little cost as possible, but by which we now can reach a hundred or more different 'phones and a dozen cities, towns and villages.

As with us then, if you are going to build a line, the first problem is the poles. Many localities are favored with natural timber from which splendid burr or white oak may be obtained, and these well seasoned before planting make lasty poles and are cheaper than cedar, though, of course, can not last with them. If then we take the native oak as the material to be used in some localities, the cost will be very slight as compared with others, but we will take about the average cost as near as we can get at it. The statute requires that all telephone poles along the road side shall stand fifteen feet above ground and at crossings at the height of twenty feet. The length of the poles then should be twenty and twenty-five feet respectively, allowing at least four feet in the ground, and they should be six, and better to be eight inches in diameter at the base. Where these poles can be purchased we estimate that they can be bought delivered and set at an expense not to exceed 50 cents each, and as indicated many localities could beat that by at least one-half. We consider 200 feet apart as about the proper distance, especially if more than one wire is to be placed on the poles, but if preferred, and only one wire is to go up, then they may be set 300 feet apart. For our estimate we will count 25 poles to the mile. The wire should be of good galvanized iron and free from defects, strong but not too hard as a softer wire transmits better on account of less molecular resistance. No. 12 or 12½ wire of good quality should be purchased somewhere from \$2.25 to \$2.50 per hundred pounds. For supporting and insulating the wire either glass or porcelain knobs are quite servicable and cheap, but bracketing is much more servicable and practical for general use. A No. 4 porcelain knob can be bought in quantity at about 75 cents a hundred, while the good bracket insulator will cost about 3 to 4 cents for each support. Now if as many as four wires are to go on one line of poles we should have cross arms with pins and insulators and this will make a cost of each support about 7 cents. Now the stretching and mounting of wire and a little incidental extra work will add something to the cost of our line. Let us sum up our cost per mile for convenience as follows:

25 poles delivered and set at 50 c. each	\$12 50
1 mile of No. 12½ wire, 135 pounds.....	3 25
25 brackets and insulators at 4c.....	1 00
Mounting wire and extras.....	1 00
Making a total cost of constructing 1 mile of line.....	\$17 75

At a very liberal estimate for everything.

Now if we add to this the cost of two good 'phones at \$15.00 each, one for either end of the line, we have the cost at \$47.75, when by adding to this \$17.75 for each additional mile constructed we have nearly the cost of a single line for almost any distance. In the case of party lines, of course the cost of line construction can be lessened somewhat at least to some. Connecting one

end of the line to a switch board system will also vary the original cost a little to the individual. Then again if cedar poles are preferred, good ones can be procured laid down in Central Illinois in carload lots and delivered and set at from \$22 to \$23 a mile, thus adding say \$10 a mile for cedar poles over and above previous estimate. We believe that if lines supported by each pole are to be numerous that cedar poles will pay best in the end, though it is a question of location largely. The above estimate can be varied much according to material and supplies. As to illustrate:

If poles can be put in at 25c. each	\$6 25
Wire bought at 2c. per pound	2 70
Porcelain knobs as insulators.....	20
Mounting wire and extras.....	1 00
Making a total cost per mile of	\$10 15

As against \$17.75. Then 'phones can be purchased that will talk and talk good at \$8.00 each. We have the cost then varying according to the ideas or decision of the constructors from \$26.15 to \$47.75 with a 'phone at either end of a single line.

The construction and operation of a single line is comparatively simple, but we all want to be connected in a short while and now complications begin to arise and necessitate more efficient management and deeper forethought and additional expense, care and attention. We can not get good service through an exchange without a good switch-board and they will cost \$4 a drop, while the latest improved and most approved and easily operated ones will cost \$5 a drop. Switch boards can be purchased, however, from \$2 per drop to six. Our switch-board is in and now some one must attend it; some one must keep it properly adjusted and protected, and some one must look after the requirements of the switch-board and subscribers. This again will take work and if anyone imagines it will run itself they had better leave it alone, but we do not wish to be understood that it will not pay, for those who use it should pay for the work, but we do want to insist that it necessitates systematic method and close observation to insure good and satisfactory service. With proper arrangements of location and good forethought considerable area of country may be connected through one central exchange and too many of these attempted exchanges will be a matter of annoyance and finally a larger expense with imperfect service.

While the "farm telephones" in our State have been operating in a few localities and in those only a short time comparatively, yet where they have been tried they have passed beyond the experimental stage and they have come to stay. Some still may say that telephones are extravagant, that they are a luxury which we can do without as our forefathers did and made money and possessed happiness and that by this and other methods of fast living and doing things in a hurry we shorten our lives. Indeed we do live in a rapid age and with hurry and bustle everything is done, but we must keep pace with our own age for we can live in no other than our own and if we fail to keep pace with it, to keep in tune with it, its advantages are not ours. If we were to proceed in our time as if we had a lifetime of Methuselah we would find our labors cut off at three score years and ten as a very meagre accomplishment. The savage on his hunting ground lived, had plenty to eat and enjoyed himself without work. He was satisfied. Civilization has carried us on to higher ideals, higher morals and higher intellectual attainments and to get the most out of life as time passes and the days are numbered with the past is our whole duty to our age. Illinois has led off boldly in the farm telephone idea and many miles have been erected within the past two years and the future will prove no exception to the rule for satisfying the wants of man, but the more we get the more we will want of them or the more that get 'em the more will want 'em. The village merchant, the business man, including the farmers generally, need the advantages that the telephone brings. The city merchant, the banker or business man can no better afford to do without the telephone connection with the agriculturist. And the women in their isolated homes on the farm welcome the cheerful tingling of the magneto bell as in answer they recognize a neighbor's voice in their own apartments in neigh-

borly tones as a relief to the monotony and lonesomeness of the rural home, for one is not alone with a 'phone in the house. Country life is made brighter. At a moment's call your neighbor is in to help and your work is planned; or several miles from a railroad town an urgent letter is dictated to a friend and the message catches an outgoing mail; or a telegraph message is sent and a few minutes later the reply comes to your ear as translated by the operator. How, you scarcely know; why, you scarcely think; but, honestly, how much was or would that one message be worth to you right then? If those who supply you with needs must have quick service to accomplish profit bargains, you who supply them with necessities will soon find the secret advantage in the telephone as your servant. The landlord and tenant may consult and the employer dictate to his men, though miles apart, and with no uncertain sound has the advantage of the telephone impressed itself upon that forgetful man whose wife wants him to bring something from town for tea, but his memory is confused—by telephone he talks home for instructions or a more definite description, and curtain lectures are becoming unfashionable in telephone districts. Even the women find traditional recreation in the gossiping facilities afforded by the telephone and news real or fancied grows and spreads with extravagant rapidity, sometimes, it is true, to the discomfiture of some of the men on their return.

While our business may have taken us from our country homes to the crowded city as affording a better and wider field for our chosen profession, trade or special work, yet around the old farm and farm life clings many a memory of the days spent there in happy youth, away from the brunt of city life, in the full zephyrs of earth and surrounded by nature's beauties. We adore the old farm for her honest industry, her pure moral atmosphere, her cheerful fireside and the happy surroundings; we honor her for those giant intellects, those noble characters and great statesmen she has built for our nation; we deplore the fact that the whirl of business is carrying many if not most of our energetic "young America" off the farm,—from the rural life into the crowded cities and often to dens of vice—and among other things then we plead and recommend for our subject a place in the improved economic conditions of the farm and farmer's home, to not only make it more attractive, but to take from it that degree of isolation, that feeling of being "behind the times" and furnish a means of supply of social, commercial and business news; of ease and of happiness; and the resourceful means of facilitation, coöperation and method so noticeable in our age.

President Moore announced a meeting of the directors of the Illinois Farmers' Institute to be held Thursday morning at 8:30 o'clock, in room adjoining chapel of the University building.

The audience was favored with a few rounds of the college yell given by a large number of students by special request.

Recess until 7:30 p. m.

UNIVERSITY HALL, UNIVERSITY OF ILLINOIS,

WEDNESDAY EVENING SESSION, FEBRUARY 23, 1898, 7:30 P. M.

COLLEGE SESSION.

Hon. Amos F. Moore, President, introduced L. D. Hall, Vice President of the Agricultural Club of the University of Illinois as the chairman of the evening session.

The first half hour of the session was devoted to music by the University Military Band and the male quartette.

Prof. Davenport, Ladies and Gentlemen:—We are very much indebted to Prof. Jones and his boys for giving us two programs, one last evening and one this evening. You have an instance of this fact here, that in this University each department is interested in the progress of every other department. No man has rendered more willing service here than Prof. Jones. I must say one of the most pleasant functions that it is our lot to enjoy here is the military band concert. It will occur tomorrow evening at Military Hall.

The papers this evening are almost all papers of the students in agriculture. They have been taken from the pigeon holes. They were not prepared for this occasion, but they represent work that has actually been done in the class. The students in agriculture maintain an agricultural club, and it is fitting to call upon the vice president of this club to preside at this meeting, and I am happy to have this meeting placed in the hands of Mr. L. D. Hall, the vice president of this club, who will preside.

Mr. L. D. Hall, Ladies and Gentlemen:—Just one word of introduction. I wish to say just a word in regard to the Agricultural Club. The students and professors who are interested in agriculture are organized into an Agricultural Club. Our meetings are preëminently practical. We aim to make them practical above everything else. We discuss scientific and educational topics with relation to their direct bearing upon farm life and the business of farming. We aim to discuss such topics as we can use when we go back to the farm. Now this is a practical age. There has been an outcry against young men graduating from an agricultural college and then going into some government position, or making an agricultural newspaper man of himself.

In the Agricultural Club students have practical ideas of agriculture as well as of anything else. We want to fit ourselves to go back to the farm, not to go to a city, not to go into some government position; but we are here fitting ourselves so that we may go back to the farm and make use of the ideas and theories which we get here at the University, for I tell you, my farmer friends, we believe that the future peers of this country are going to be drawn from the educated and intelligent land holding farmers. (Applause.) And the Agricultural Club stands for this one thing above everything else, the advancement and education along agricultural lines, not that which will turn a young man away from the farm, but which shall fit him and prepare him so that he can go back to his land and make the best out of that which he has been given. (Applause.)

Now on behalf of the Agricultural Club I wish to sincerely thank the programme committee who have placed this meeting in our charge. We consider this a very great opportunity to show you what we are trying to do, to show you who we are, and just where we stand in the agricultural and educational world. Now as the programme proceeds, you will notice that the papers which are read and the talks which may follow, will be principally by students here in our agricultural department, and what they tell you will be things which they have met in practical daily work on our college farms and in our laboratory. And we wish to bring you into closer touch with agricultural education—student life, from the student's standpoint. We wish you to look at it from our side of the case; that is what we shall endeavor to have you do tonight. We want to show you the work as we are doing it here in the University. We are not boasting of what we have done. We have not done much, comparatively, in the agricultural department. I know Illinois is a great State; but somehow we have not pushed our agricultural college along as the neighboring states have done. We have not attained very much prominence, but I think the time is coming when we will push ahead. I believe we will have a better equipment in coming years, and I believe we will be better fitted to perform the work in the agricultural department of the University, which will be in keeping with the prominence of the great State of Illinois in other lines. I feel that the time is not far distant when our agricultural college here shall have a building and equipment which will be equal to those of the states around us. We have men here who are bound to make this thing successful. I want to say right here, as a student, that we are proud of our Agricultural College Faculty at the University. [Applause.] I believe President Draper has a word to say.

President Draper submitted a number of telegrams from Governor Tanner and others, a copy of each of which is as follows:

STATE HOUSE, SPRINGFIELD, ILL., February 23, 1898.

Hon. A. S. Draper, University of Illinois, Champaign, Ill.:

Complications have arisen of such proportions that my friends and the friends of revenue legislation deem it unwise and dangerous for me to leave here tomorrow. The success of this most important measure demands my presence here. I had hoped to be there and regret exceedingly the difficulties in the way.

JOHN R. TANNER.

STATE HOUSE, SPRINGFIELD, ILL., February 23, 1898.

Hon. A. S. Draper, Champaign, Ill.:

Legislative matters demand the Governor's presence in Springfield tomorrow.

W. A. NORTHCOTT.

SPRINGFIELD, ILL., February 23, 1898.

President A. S. Draper, Champaign, Ill.:

It is absolutely necessary for the Governor to be here tomorrow to aid in the passage of important legislation.

CHAS. E. SELBY,

Chairman Steering Committee.

E. C. CURTIS,

Speaker.

The Chair:—The first paper on the program by Prof. J. C. Blair, Instructor in Horticulture, "Horticultural interests of Illinois," will be read by that gentleman.

Prof. Blair read as follows:

THE HORTICULTURAL INTERESTS OF ILLINOIS.

Having spent four and a half years studying the horticultural interests of New York state and nearly two years studying the same interests of this State, it may be interesting to you to know the results of this study. At the outset you must realize the fact that the second greatest horticultural state in the union is New York state, and that her horticultural interests are so great and diversified that one is likely to be prejudiced in her favor. Not only that, but visitors from this state to other regions, at least those of them whom I have met, convey to one the idea that Illinois is chiefly a corn producing state, with other resources almost wholly undeveloped. In fact after taking up my labors in the State University I still heard of the wonderful corn productions. Indeed her corn possibilities were so emphasized by nearly all with whom I talked that I really felt there would not be any great field for my horticultural labors and studies outside the immediate work of the university. This then was my introduction to the agricultural and horticultural interests of this great State.

It was therefore with no small degree of apprehension that I commenced a consideration of the geographical, climatic and soil conditions of Illinois. My first surprise and pleasure was granted me upon a realization of the fact that Illinois is located in the fruit belt of the continent, and possesses a range of latitude of five and one-half degrees. This means that the northern boundary line of California extended due east would pass just north of Chicago and south of Boston; while a line started on the 37th parallel of latitude at Santa Cruz in central California, and from thence passing through the great Santa Clara Valley, noted for its prunes, apricots, and wine grapes, and extended east, passes through Cairo of this State and Fortress Monroe in Virginia. This, together with the fact that there is a one-half greater rainfall in the southern part of this State than in the northern, and a temperature difference only ten degrees Fahrenheit, shows us with surprise that the geographical and climatic

conditions of Illinois are equal to those of the nine eastern states of Massachusetts, Rhode Island, Connecticut, the southern half of New York, Pennsylvania, New Jersey, Delaware, Maryland and Virginia; and certainly second to that found in the great horticultural section of California. Sacramento, in the heart of that great fruit valley, rich in its productions of almonds, plums, cherries, apricots and pears, is in the same latitude as Centralia in this State.

If we now consider the soil conditions of the State we may make the statement that agriculturally Illinois stands without an equal. Possessing a soil of surpassing fertility and a climatic range of 356 miles north and south, it yields a greater amount of agricultural and horticultural production than any other state in the union. No large tracts of worthless land such as characterizes the topography of other states are to be found here, but the farmer in all portions of the commonwealth obtains a rich reward for his labors. In the northern and central portions are raised in abundance nearly all those plants which are common to the north temperate zone, while near Cairo vegetable productions partake somewhat of a semi-tropical nature. A most remarkable feature of Illinois is the almost entire absence of small natural lakes such as characterize the fruit regions of New York and southern Michigan and Wisconsin.

From all this evidence there seems no reason why Illinois should not be one of the greatest horticultural states in the union. This opinion was confirmed by a study of her relative rank among the leading horticultural states. For this purpose the United States Census report for 1890 furnished the only means available for getting at the truth of the matter, which, as indicated by the tables of statistics here compiled, is as follows:

TABLES.

NURSERIES.

	No. of nurseries.	Area in acres.	Total value.	Capital invested.	Men employed.
New York.....	530	23,840	\$10,609,866	\$12,202,844	3,970
Illinois.....	434	17,812	3,595,850	4,778,083	2,324
California.....	166	11,144	4,158,851	4,871,929	804
Michigan.....	155	3,015	502,296	869,491	878
Ohio.....	393	16,790	3,159,358	4,178,518	2,751
Iowa.....	183	12,049	1,276,979	1,591,790	1,177
Missouri.....	229	15,190	2,604,746	2,932,473	1,317
First.....	New York.....	New York.....	New York.....	New York.....	New York.
Second.....	Illinois.....	Illinois.....	California....	California....	Ohio.....
Third.....	Ohio.....	Ohio.....	Illinois.....	Illinois.....	Illinois....
			Dif. bet. last two is \$93,846		

ACREAGE OF NURSERY TREES.

	Total acreage....	Apple.....	Cherry.....	Peach.....	Plum.....	Pear.....	Hardy shrubs....	Strawberry	Raspberry.	Blackberry
New York.....	12,356	2,000	493	490	1,331	1,587	402	448	1,018	405
Illinois.....	12,307	3,016	508	155	1,514	981	504	460	730	383
California.....	4,732	576	108	170	441	242	13	33	21	5
Michigan.....	1,754	363	40	129	48	105	55	87	150	28
Ohio.....	11,695	2,756	606	337	1,078	945	430	360	1,268	451
Iowa.....	7,917	1,741	506	37	562	258	308	298	475	92
Missouri.....	5,646	1,880	198	176	708	497	196	176	189	131

APPLES.

	No. acres— 1-yr. trees.	No. acres— 2-yr. trees.	No. acres— 3 yr. trees.
New York	807	728	465
Illinois	1,071	864	1,081
California	261	185	130
Michigan	125	128	110
Ohio	1,048	990	718
Iowa	615	612	514
Missouri	744	688	448

CHERRIES.

	No. acres— 1-yr. trees.	No. acres— 2-yr. trees.	No. acres— 3-yr. trees.
New York	162	159	172
Illinois	125	193	190
California	65	43	.....
Michigan	14	6	20
Ohio	186	237	183
Iowa	171	274	61
Missouri	29	95	74

PEARS.

	No. acres— 1-yr. trees.	No. acres— 2-yr. trees.	No. acres— 3-yr. trees.
New York	726	689	172
Illinois	341	270	370
California	162	80	.....
Michigan	54	30	21
Ohio	266	264	415
Iowa	34	26	195
Missouri	240	185	72

PLUMS.

	No. acres— 1-year trees.	No. acres— 2-year trees.	No. acres— 3-year trees.
New York	587	588	186
Illinois	445	283	796
California	261	180	.....
Michigan	48	.....	.....
Ohio	288	483	304
Iowa	192	175	195
Missouri	163	293	252

PEACHES—STRAWBERRIES.

	Peaches— Acres, 1-year trees.	Strawberries— Acres, 1-year plants.
New York	490	448
Illinois	155	460
California	170	33
Michigan	129	87
Ohio	337	360
Iowa	39	298
Missouri	176	176

GRAPE VINES.

	Acres—1, 2 and 3-year.
New York	1,497
Illinois	604
California	714
Michigan	9
Ohio	364
Iowa	427
Missouri	493

DECIDUOUS SHADE OR TIMBER TREES—HARDY SHRUBS.

	Trees—Acres, 1 and 2-year.	Shrubs—Acres, 1 and 2-year.
New York	902	365
Illinois	853	424
California	106	13
Michigan	155	35
Ohio	685	394
Iowa	901	235
Missouri	257	116

FLORISTS' ESTABLISHMENTS.

	Number of establishments.	Number of women managers.	Total value of cut flower sales—1889.
New York	793	50	\$3,615,667
Illinois	330	20	1,888,722
California	150	18	150,000
Michigan	167	15	350,432
Ohio	393	21	586,000
Pennsylvania	544	19	1,881,590
Massachusetts	407	25	1,036,409
New Jersey	366	8	1,288,478

From these figures it will be seen that Illinois is the third greatest horticultural state in the union. In total acreage of apples, plums, hardy shrubs, and strawberries she ranks first; while in general horticultural products the rank is as follows: In number of nurseries New York stands first, Illinois second, and Ohio third; of nursery area in acres, New York first, Illinois second, Ohio third; total capital invested in nurseries, New York first with more than 12 million dollars, California second with nearly five millions, and Illinois third with \$4,777,083. In number of men employed in the nursery business New York stands first, Ohio second, and Illinois third. In total acreage of nursery trees New York stands first, Illinois second best with only 49 acres less, and Ohio third; in total acreage of nursery plants Illinois is first, New York second, Ohio third; cherries, Illinois first, New York second, Ohio third; peaches, New York first, Ohio second, Missouri third; plums, Illinois first, New York second, Ohio third; pears, New York first, Illinois second, Ohio third; hardy shrubs, Illinois first, Ohio second, New York third; strawberries, Illinois first, New York second, Ohio third; raspberries, Ohio first, New York second, Illinois third; and blackberries, Ohio first, New York second, and Illinois third.

A comparison of the number of acres of one year apple trees in different states reveals the following: Illinois first, New York second, Missouri third; in number of acres of two year apple trees, Ohio first, Illinois second, and New York third; number of acres of three year apple trees, Illinois first, Ohio second, and New York third; one, two, and three year old cherry trees, Ohio first, Illinois second, and Iowa third; pears, New York first, Illinois second, Ohio third; plums, Illinois first, New York second, Ohio third; grape vines, one, two and three year, New York first, California second, and Illinois third; strawberries, Illinois first, New York second, and Ohio third; hardy shrubs, Illinois first, Ohio second, and New York third; deciduous shade and timber trees, Illinois first, New York second and Iowa third; florist establishments, New York first, Pennsylvania second, Massachusetts third, New Jersey fourth, Ohio fifth, and Illinois sixth. Illinois has 18 florist establishments managed by women alone. The total value of cut flower sales in this State for 1889 was \$1,888,000, second only to New York. It may be interesting here to note that the American florist Association is the largest association of an agricultural nature in this country.

A third series of studies was made, based upon a personal inspection of more than 180 fruit plantations in 47 counties of this State, all of which were visited during the past fifteen months. Commencing at Jo Daviess county in the northwestern corner of the State, and going from there through Stephenson, Winnebago, Boone and Ogle counties, I was surprised to find apples, plums, pears and small fruits doing exceptionally well; and I see no reason why the fruit interests of this portion of the State should not greatly increase. Along the western counties of the State, in Hancock, Adams, Pike, Jersey, Madison and St. Clair, I was surprised to find that the bluffs were admirably adapted to the growing of not only the above named fruits but also peaches and other fruit trees. In Brown county, at Versailles, is one of the most magnificent peach orchards I have ever seen—that owned by Root brothers. In regard to the southern counties little need be said after the excellent paper given by Mr. Alvin C. Beal, of Mt. Vernon. I have spent three weeks in these southern counties, and I give it as my opinion that no country with greater fruit possibilities exists in the union than is to be found in southern Illinois.

The question now for our consideration is, what is the attitude of the University of Illinois towards these great horticultural interests of the State?

The State University, believing as it does that the best possible education should be given to the greatest number among all classes of the State's population, is at the present time doing its utmost for the agricultural students coming to it; and those of them studying in the department of horticulture are by no means neglected, although we are sorry to say that we are compelled to give this instruction without laboratories and without propagating houses. There was a time in the history of this institution when it was believed that the agricultural and horticultural students should spend a considerable portion of their time at manual labor in the fields; but we are glad to say that this state of affairs no longer exists, for the University realizes that the student's time is valuable, and that what he needs most is principles and a realization of the fact that dignity of mind comes before dignity of muscle. A noted writer has said, and rightly too I think, "The question upon which all successful agricultural education turns is this—all technical academic education is not for the purpose of determining a man's professional occupation. The man with his desires determined asks for help. It is our place to give it to him." Our horticultural department does not ask "How can we educate young men to become horticulturists?" but rather asks, "How can we educate farmers and horticulturists to be better farmers and horticulturists and better citizens?" The courses of instruction offered by the department of horticulture have three aims, and three channels through which they may aid the horticultural interests of the State. These are: first, to give instruction in the various horticultural subjects to both regular and special students; second, to develop horticultural science through investigation and experimentation; and third, to disseminate horticultural knowledge and information among the farmers and fruit growers of the State by means of addresses, practical demonstrations, publications, and by public and private correspondence. For a complete account of these courses I would refer you to the University catalog

or the report of the State Farmer's Institute for last year, where they are given in full.

In concluding these remarks let me emphasize the fact that the horticultural interests of this State are the third largest in the union; and that if our agricultural and dairy interests are of great magnitude, so also are our horticultural interests. Dealers in stocks and bonds, speculators in corn and wheat, may laugh at our enthusiasm over our horticultural productions, may laugh at our enthusiasm over a new flower or fruit; but I count that man of far greater value to mankind—that state of far greater importance—who or which by investigation, experimentation, and by careful nature study, gives an added flower or fruit, than the one that merely piles up individual riches by the re-handling of the products of other men's labor.

Mr. F. D. Linn, of the class of 1898, President of the Agricultural Club of the University of Illinois, was then introduced, and read a paper from data collected in class work, on "Advantages and Disadvantages of Inter-Breeding Domestic Animals," as follows:

ADVANTAGES AND DISADVANTAGES OF INTER-BREEDING DOMESTIC ANIMALS.

If we go back awhile in the history of the world we find primitive man surrounded by wild animals. These at first he did not domesticate, but made use of their products for food and clothing, only as did the roving hunter of more recent times. However, it was soon learned that by domesticating certain ones they could be made to better serve man's wants, and with this domestication improvement began. Not systematic at first, it is true, rather unconscious, but laying the foundation and paving the way for the better methods which followed, and which have made our farm animals so much unlike their wild ancestors. Doubtless in-and-in breeding, or the mating of nearly related animals, was practiced very early, though Bakewell, one of the great English breeders of the eighteenth century, is credited with having first employed it systematically and continually in the improvement of stock.

The question with which we are concerned is, what are the principles on which the practice of in-and-in breeding rest; do we in that practice violate any of the laws of nature, and what must be the result of it? While this question is of vital importance to the stock breeder, it is one not easily answered to the satisfaction of all, because in the present state of scientific knowledge we can not go back to the first principles of reproduction, but must base our conclusions largely on matters of observation, which are often misleading. We all have certainly seen both good and bad results following inter-breeding, and can we say that the advantages and improvement gained through it by some breeders is sufficient to justify the practice, or must we conclude that there is in it some inherent property or tendency which insures bad results, and which those benefited have escaped merely by favorable accident. Many popular articles are written which contain long lists of instances cited to show the evil consequences of in-breeding, but an examination of most of them will cause a person to question whether the evil effects which are noted may not be due to some other cause, and the nature of the process its self still be free from any thing which insures disaster.

The opposers to this method say that it reduces the constitutional vigor of the animal; that it causes a predisposition to disease and induces sterility; and in fact, some can by it account for all the undesirable characters which may show themselves in the progeny of nearly related parents. It is a fact to be regretted that we can not know all of the conditions and circumstances which have surrounded some of the many breeders who have employed this method and have published their results, because local conditions are always an important factor with the stockman, and are often responsible for effects whose causes are seemingly more remote. Notwithstanding this, a few examples will aid in getting the problem before us, and probably more cases which seem to show the evil effects of inter-breeding are to be found among pigs than among any other of the large animals. One of these is the case of Mr. Wright, an English breeder, who crossed the same sire with the daughter,

granddaughter, great granddaughter, and so on for seven generations, which of course would be the closest form of in-breeding, except had the union been between brother and sister. The result was that in many instances the offspring failed to breed; in others they produced but few that lived, and many of those that did live lacked intelligence, and were constitutionally weak. Now two of the last females of this long course of inter-breeding were sent to other sires and bred freely, though would not cross at all with their own sire. This case is often cited, and is said to show that by inter-breeding we are "tampering with nature," and that evil, not good, will follow. However, there is another possible explanation for such results. The probability is that the fattening quality of these hogs had been highly developed and became a dominant character, while the reproductive powers were neglected and became impaired, not because of any inherent property of in-breeding, but simply because the selection had been for a single feature, while unnoticed weaknesses in other parts were being transmitted from parent to offspring, and thus accumulated; and there seems to be a correlation of functions in the animal body such that an increased development of one part may easily be at the expense of some other.

Suppose that several men start to breed sheep from the same original flock, each with his own method, some breeding entirely within the herd and others crossing or breeding out. One breeder starts and selects with the idea that good form and strength of constitution outweighs every other consideration, another that an excellent fleece should be the most important characteristic, while a third specially admires a smooth even skin, and so on through the list. While at first it would seem as though these breeders very nearly agree, yet if they continue selecting and mating for a long period we are almost certain to find their different individual tastes so firmly stamped upon their animals as to make a very noticeable difference in their characteristics. We will find one breeder's flock possessed with a remarkable constitution, another with immense fleece and probably with a good constitution also, but while the sheep of the third flock have a smooth unwrinkled skin combined with a good fleece, they are weakly and may become partly or wholly sterile, and that, too, regardless of whether or not they were in-bred. If in-bred, this weakness might show itself sooner than it otherwise would, because by the fundamental principle of in-breeding, a concentration of blood is secured which tends to impress the progeny strongly with the characters of the parents. That is, if there is a tendency toward sterility or weakness in two of the nearly related sheep, and these two be mated, that weakness will be intensified because the hereditary tendencies of related animals are similar. Viewed in this light, such defects become matters to be guarded against in selection, rather than matters which have to do with the principles of reproduction. It is true, the mathematical probability of getting parents affected with like weaknesses in selection of inbred animals, is very great, but that this does not necessarily follow is shown in many cases. The early breeding of the race horse in Europe is a familiar example. A few animals were captured in Arabia during a war, and when brought back to Europe they were found to be much faster in the hunt than any of the native horses, so that men immediately began to breed them. For many generations they practiced inter-breeding closely, and the records of early in-bred trotters, as well as many of those of more recent times, shows them to have been possessed with wonderful constitutions. We need but refer to the stud books for abundant evidence to show that great sires are often the result of long courses of close inter-breeding, and we also have as certain knowledge that the same process at other times and in other hands has produced sires weak and impotent. What then has been the difference? Why in some cases does the union of animals nearly related impart strength and vigor, while in others it entails weakness and sterility? Though no positive reason can be ascribed, a possible explanation is to be found in the supposition, that as the bounds of selection became narrowed—and we certainly must attach importance to the fact that breeding within the herd limits the power of selection—the breeders who experienced bad results had unknowingly mated animals which suffered alike the same defects, and these being intensified finally resulted in a broken constitution or in loss of fertility. One might think that by careful observation breeders would be able to guard against such weaknesses, and certain it

is, that he who knows his animals best will be least likely to suffer, but we must remember that characters are sometimes latent, and may be transmitted in such condition for several generations, and though they remain hidden in this way for some time they may, when certain combinations are made, develop into characters new and unexpected.

Perhaps no where has inter-breeding been practiced so closely and continually by breeders as in the development of the Shorthorns, Bakewell, the Collings, Booth, Bates, and in fact all the great improvers resorted to in-and-in breeding as a means of improvement. The celebrated bull Favorite, bred by Charles Collings, was the product of close inter-breeding, and certainly he was a wonderful animal. The herd book shows him to have been used in as high as five and six successive crosses with his own get, and yet in many instances the results were animals which proved themselves to be great breeders.

"Mr. Bates bred in-and-in with the Dutchess family for thirteen years but must have recognized some determination in his animals for he introduced a cross and during the next seventeen years outcrosses were made three times." Much has been said about sterility among this tribe during a later period of their development, due to inter-breeding, but here again, in the absence of direct evidence we may say that what appeared directly traceable to that practice may have been due to some other cause, or at least that infertility resulted merely as a summation of cumulative weakness, in which case we could not say that it was caused by in-breeding, but only that in this way its causes were transmitted.

Another example of close breeding among cattle is seen in the herds which are preserved in a wild state in parks in Great Britain. One of the largest and best known is the Chillingham herd which had its origin with a cow and her bull calf and which has been kept for over five hundred years with no introduction of foreign blood. There has been no marked decrease in the size of these animals and they continue strong and vigorous and breed freely. Doubtless these cattle owe their undiminished size and vigor largely to the rigorous selection which goes on among the males for they contend the leadership in ferocious battles and the cows are bred almost exclusively by the bulls of greater size and strength.

When we turn our attention to the plant world we find the results of in-breeding to be even more conflicting than among animals. Mr. Darwin conducted a series of experiments for a great many years to test the effect of inter-breeding among vegetables, and concluded that long-continued self-fertilization causes a decrease in the number of seeds produced as well as loss of size and vigor. It is noticeable, too, that flowers are almost invariably constructed so as to favor or necessitate cross fertilization. One of Mr. Darwin's most extended and conclusive experiments along this line was with the common morning glory. Ten flowers of one of these plants growing in a green house were self-fertilized and ten other flowers of the same plant were crossed or fertilized with pollen from another plant and the seeds allowed to ripen. A number of these seeds were then made to germinate and as two seeds, one each of the crossed and self-fertilized germinated they were planted in two sets of pots which contained the same kind of soil and which at all times during the experiment were carefully subjected to the same conditions. When the plants bloomed those from crossed seed were again crossed and those self-fertilized were again in-bred. After the plants had attained their growth and the seeds were matured, the heights of the various plants were measured and the number of seeds and their weights determined. He found that the cross-fertilized plants were invariably more hardy and vigorous than were those which had been in-bred or self-fertilized. The average height of the crossed in this first generation was 86 inches and that of the self-fertilized 65 inches, so that in height, the crossed were to the self-fertilized as 100 to 76. The crossed plants produced 121 seed capsules and the self-fertilized only 84 so that the number of capsules were as 100 to 69. The crossed plants also bore the most seeds in the capsules and they were relatively heavier than were the seeds of the self-fertilized. Seeds from the first generation were then treated as before and in this way the experiment was repeated for ten generations, and in each instance, results similar to the first were obtained. In the tenth gen-

eration the average height of the crosses was to the height of the self-fertilized as 100 to 54. This of course is a very great increase over the first, in which it was only 100 to 76, but in the ninth it was only as 100 to 79 which would be a little less than in the first so that the great difference in the tenth was probably accidental, being due to a diseased plant among the self-fertilized which was very small and which produced but few seeds. By the principle of in-breeding we might expect that the effects would be accumulated and that there would be a more or less gradual decrease in relative size and seed production on the part of the self-fertilized from the first generation to the tenth. This we do not find and Mr. Darwin accounts for it in the fact that the self-fertilized and crossed plants were all descended from the same plant so that many of the crossed plants were themselves related. The great hardiness and vigor of the crossed plants was proved at different times during the experiment by exposing them to sudden changes of temperature and by growing them under unfavorable conditions in places where they would have to compete with full grown plants of other kinds. He found in all cases that the cross-fertilized plants were better able to withstand angling and unfavorable conditions than were those self-fertilized. Mr. Darwin obtained results similar to these with several different plants and they bear good evidence of the fact that in-breeding or self-fertilization of plants has a tendency to reduce their vigor and fertility. On the other hand we have the example of the bread fruit and plants similar to it, which do not bear seeds but are propagated and have been for ages only by cuttings and still reproduce and develop with undiminished vigor.

This raises the question as to the ultimate effect on the type of the convergence of characters induced by breeding in-and-in. To what extent is convergence of vital importance to the breed? On this, science sheds but little light, though reasoning by analogy we may draw some inference from plants which reproduce only by the asexual method. The banana, like the bread fruit plant and the seedless grapes, lost the power of producing seeds and for thousands of years has been propagated only by cuttings. Notwithstanding this continued asexual reproduction and consequent convergence of characters the banana grows with undiminished vigor and remained true to type, which leads one to suspect that convergence is not necessarily destructive. It must be borne in mind, however, that the comparison between the asexual reproduction of the banana and the union of close affinities in the animal is but very rough.

Why now, if in-breeding is often attended by uncertainty and danger, do breeders so persistently resort to it? What advantage does it possess over crossing or breeding-out? The answer to these questions may be better understood if prefaced by a brief explanation of the meaning and significance of sexual reproduction. We have in the process of sexual reproduction the coalescence of two distinct and highly specialized germ cells, each of which by its specific structure, is the bearer of the hereditary tendencies of its parent. Obviously, then, the offspring which develops from this union of male and female germ will combine the characters of the two parents. Now animals rarely have like powers of transmitting their dominant characters; usually one is somewhat prepotent over the other, and that one is prepotent whose characters have become most firmly fixed; either by the accumulation of slight variations through a long course of out-breeding, or by the more rapid intensification which evidently results from the union of animals nearly related since their hereditary tendencies are somewhat alike. The application of this principle by which characters are ingrafted and fixed may be illustrated in this way. Suppose that some desirable variation or character occur in but two animals in a herd of a hundred. Obviously if we breed out with either one of these we will stand but one chance in a hundred of impressing the character upon the offspring, while if the two be mated the probability of fixation will be greatly increased. Hence, since the dominant characters of nearly related animals are somewhat the same, we can, by the union of such animals secure a uniformity of hereditary tendencies which increases the power of their transmission.

An examination of the herd books and register will show that many of the most successful breeders have not in-bred all of their animals but only certain tribes or families in which specially desirable characters appeared, the object

evidently being to secure prepotency in the transmission of such characters. Mr. Bates bred the Dutchess family closely in-and-in and we find it to have been the source of most of the males used in his herd. The same is true of other improves, close breeding having been resorted to as a means of accumulating slight variations and fixing them. What now shall we say regarding the general practice of breeding from close affinities? On the one hand it enables breeders to ingraft upon animals artificial characters which adopt them for special purposes, and on the other we are forced to admit that it often entails weakness, since undesirable characters are strengthened and fixed by the same principle that are desirable ones. Admitting that various forms of weakness do appear among in-bred animals as a result of the augmentive action of inter-breeding on morbid tendencies common to the two parents; shall we consider this action alone as sufficient to explain all such weaknesses or is there some other principle which renders close breeding more liable to evil consequences than out-breeding. In other words does the simple act of crossing or of introducing foreign blood have any direct beneficial effect on the animals? Among some of the lower forms there is good evidence that it does under certain conditions, but whether or not these affect or were entirely independent of conditions is an open question, as is also the question when applied to the higher animals. What significance would a definite answer to this question have for the stockman? If answered in the affirmative it would mean that close breeding introduces an element of danger which no amount of judgment or care in selection can eliminate, while a negative answer would imply that perfect selection would give the breeder as complete control over in-bred animals as is possible to have over animals in out-breeding. We must recognize, however, that the most judicious selection is at best imperfect because of our inability to detect latent characters and this fact will always unite with inter-breeding an element of uncertainty.

No matter what opinions we may form regarding the advantages and disadvantages of in-and-in breeding the fact remains that all the great improvers have practiced it to a greater or less extent, and that to it we owe very much for the high character and usefulness of our farm animals.

E. T. Robbins, of the class of 1900 was introduced and read a paper prepared in class study, on the "Fixation of Nitrogen by Plants and its relation to Agriculture," as follows:

THE FIXATION OF FREE NITROGEN BY SOILS AND BY PLANTS AND ITS RELATION TO AGRICULTURE.

The subject of soil fertility is now of vital importance to the farmer, and especially so, in regions where the virgin productiveness of the soil has been exhausted by careless and extensive cropping. In a productive soil, all the elements necessary to plant growth must obviously be present in proper form to be assimilated by the plant, except of course these elements which the plant takes directly from the air. A deficiency of any element checks the power of the plant to utilize the other elements. In other words the growth of the plant is proportional to the relative amount of the scarcest element in the soil; and so a scarcity of one element checks productiveness just that much.

Some of the necessary elements are present in the soil or air, and available for plant use, in practically inexhaustible quantities, but others are particularly subject to exhaustion and must be applied as fertilizers. The three elements generally most needed, and which are the ones principally furnished in commercial fertilizers are nitrogen, potash and phosphorus, and of these, nitrogen is most liable to waste as a result of poor management and careless cropping, while it is at the same time most expensive and difficult to secure in a form in which plants can utilize it.

As 79 per cent of the atmosphere consists of nitrogen in the free state, it was naturally supposed at first that plants used it in this form; but when it was attempted to prove that free, atmospheric nitrogen is used by plants, difficulty was at once encountered. Some of the sources of nitrogen supply of the plant have, however, been determined beyond a doubt, and a brief considera-

tion of these will make more intelligible the story of the uncertain sources of organic nitrogen.

Our soils usually contain from .15 per cent to .37 per cent of combined nitrogen, mostly in vegetable compounds, or humes. It is now decided that plants use this nitrogen almost exclusively in the form of nitrates, which constitute about 5 per cent of the total soil nitrogen. The nitrogenous compounds are, under favorable conditions, acted upon by a nitrogen ferment converting them into ammonia; this is in turn seized upon by another organism and converted into nitrous acid, which is finally acted upon by a third nitrogen ferment, changing it into nitric acid. The nitric acid, after combining with lime or other bases in the soil, is thereupon taken up by plants.

The soil nitrates are however subject to great waste aside from the expenditure by cropping. Denitrification is constantly going on by means of the nitro-organism, and great quantities of nitrates are annually washed from the soil by heavy rains. The nitrates lost by washing must not be looked upon as entirely lost to agriculture, for after passing through the cycle of life in the sea they are returned to the land in large amounts. In such deposits as the saltpeter beds of Chili. What primarily concerns us, however, is the nitrogen supply of the present. The nitrogen existing in the soil in humus is simply moving in a cycle through vegetable and animal; and as a great deal of this nitrogen is liberated and enormous quantities are washed from the soil, it is evident that if this is the only source of our nitrogen of plant growth, it will soon be exhausted. The primitive rock from which our soils are formed does not contain appreciable amounts of nitrogen, so we can not fall back on it for a supply. Then, since the foundation of the soil contained practically no nitrogen, while large amounts of it are present in the soil as it now is, it seems evident that there must be some process by which the free nitrogen of the air is converted into the combined form.

The early experiments, made to determine the entire source of organic nitrogen, led to many conflicting and often very erroneous conclusions. Of the theories advanced by early experiments, Liebig's was the most plausible, viz., that the nitrogen for plant growth is supplied by humus and also by ammonia and nitric acid washed down from the air by rains. He felt sure that free nitrogen is not used by the plant; but his calculated amount of combined nitrogen in rain water was 115 pounds per acre per annum, an amount far in excess of that which recent, conclusive experiments show to be actually brought down by rain, or from 5 to 10 pounds per acre. Some more may be absorbed from the air by its contact with moist soil, but at all events, not nearly enough to supply the demands of vegetation. There is no doubt that some of the nitric acid washed down from the air is formed by the electrical discharges in the air during storms; but most of the combined nitrogen from the air is the result of the burning or decay of organic compounds, so that it is nothing gained to the soil, but simply a returning of what it had before. In this connection it should be mentioned that Berthelot, in 1877 found that various organic compounds under the influence of silent electric discharges, even of low tension, were able to fix free nitrogen, and he concluded that such action does go under natural conditions.

The fact that certain plants, especially clover, beans and peas, do well on land where other crops fail, and that other crops following them do better as a result, was early noticed and advantage taken of it in agricultural operations, but at first no explanation was ventured as to the cause. When at last the nitrogen question was agitated, experimenters directed their attention to the determination of any possible relation which might exist between this remarkable growing power of the leguminous plants and the nitrogen element of fertility. Up to 1857 investigators were not decided as to whether or not plants made use of nitrogen other than that furnished them in the nutritive medium; but most of the well conducted experiments did indicate in the case of leguminous plants that there was some gain in nitrogen.

In 1857 Lawes & Gilbert, in England, undertook extensive experiments to reach, if possible, definite conclusions on the question as to whether any, and if so, what plants have the power of using free nitrogen, and what influence soil and other conditions bear on the performance of the function. Their ex-

periments have been very thorough and extensive and have been conducted continuously up to the present time. Their late work proves conclusively that atmospheric nitrogen is used by leguminous plants.

In connection with their work on the nitrogen problem, Lawes & Gilbert made careful study of root tubercles. Root tubercles are small, warty or berrylike enlargements on the roots of certain plants, and vary in size from small nodules the size of a pinhead up to the size of a pea. They were noticed as early as 1857, and were for a long time thought to be simply abnormal enlargements of the root tissue.

A comparison of records shows that root tubercles have never been observed on any but leguminous plants; and Lawes & Gilbert found that they were always present on the roots of plants that indicated a gain in nitrogen above that supplied to them, and were never present on the roots of plants showing no nitrogen gain.

The glory of the discovery of the relation between tubercles and nitrogen fixation must, however, be ascribed to Hellriegel, of Germany. He made very careful studies of plants grown in sterilized sand furnished with a nutritive solution, both with and without nitrogen; and he also experimented with plants inoculated with soil bacteria and others not inoculated. His conclusions briefly stated are: That the tubercles on a certain kind of plant are produced by the action of some organism which is present in the soil on which that plant has been grown successfully; and furthermore, that each plant has its own special organism, or at least that the organism which produces tubercles on one species of plants may not have the same power on plants of a different species. He also concluded that cereals and root crops have no such organisms. He published his results in 1886 and subsequent work, both by himself, Lawes & Gilbert and others has only tended to corroborate his conclusions.

The latest study of tubercle development has led to some interesting conclusions as to the conditions which influence their growth and the consequent fixation of nitrogen.

In early stages of development the tubercles seem to be a disadvantage to the host plant. This may be due to the organisms drawing more nourishment from the host plant than the added nitrogen amounts to; and it may be that in early stages the organisms fix no nitrogen, or if they do, it is probable that the plant takes the nitrogen principally from decaying tubercles rather than from fresh and growing ones. It is also found that a greater proportional amount of nitrogen is fixed when small amounts of it are present in combined form in the soil. Mr. Beal's experiments last year at this University indicate that although the number of tubercles is greatest where the soil is richest, the tubercles seem to be of no special benefit to plants growing in a rich soil. In other words, plants will not draw much nitrogen from the air as long as a sufficient quantity of combined nitrogen is supplied by the soil. It is also worthy of notice that the nitrogen of the air is not a sufficient source of supply for leguminous crops, as, if it was, plants with tubercles but growing in a poor soil would do as well as those in a rich soil, which is not the case.

The proportion of nitrogen gained as a result of root tubercles varies, as has been stated, with the amount furnished the plant. Lawes found that in the case of plants grown in a medium containing as little nitrogen as possible, there was a gain of three or four times as much nitrogen as that furnished by the seed and nutritive medium. Hellriegel's experiments with lupines showed that, when grown under otherwise the same conditions, in a soil having very little nitrogen, the inoculated plants had at maturity from 76 to 100 times as much nitrogen and from 41 to 57 times as much dry matter as uninoculated specimens.

A microscopic examination of the contents of root tubercles reveals the presence of numerous small bodies of various shapes—spherical, club or rod shaped, or Y shaped. These are thought to be the organisms causing the tubercles, and are generally classed by botanists as bacteria. Some of the

different shapes seem to be simply different stages in the development of the same species of bacteria, while others represent distinct species and are found in greatest numbers in the tubercles of certain plants.

Although it has been established as a fact that fixation of nitrogen is associated with the presence of bacteria and tubercles on the roots of leguminous plants, the exact question as to how this fixation is accomplished is yet unsettled. It is most probable, however, that the nitrogen is oxidized and fixed in the combined form by life processes of the tubercle bacteria. In support of this view the most recent investigations, conducted by Mazé, indicate very decidedly that tubercle bacteria have the power of oxidizing nitrogen, even when grown in a specially prepared sugar solution, entirely without the presence of higher plants.

Ordinarily no considerable amount of gain in nitrogen is observed except in connection with the growth of leguminous plants, but very strong evidence is at hand that organisms do exist which fix nitrogen independently of leguminous plants, and that some bacteria exercise this function without the presence of any higher vegetation whatever. Frank, Schlosing, Jr., Laurent, Koss-witch and Berthelot, all conclude from their investigations that there are nitrifying bacteria in the soil, which live in symbiotic relation with soil algae and fix considerable amounts of free nitrogen. Prof. King, of the University of Wisconsin, says that it is highly probable that even upon soilless rock, which has become the abode of lichens, the process of nitrogen fixation is carried forward, if not through the double form of life which the lichen really is, then by a process similar to the fixation by micro-organisms living in symbiotic relation with soil algae.

Beside what has been said above in regard to Mazé's conclusion that tubercle bacteria have the power of fixing nitrogen to some extent in the absence of other vegetation, it should be noted that Bethelot's experiments in 1885 indicate the presence in the soil of nitrifying bacteria acting independently of higher plant life. Furthermore, H. W. Wiley says in a recently published article, that it has been established with a considerable degree of certainty, that nitrifying organisms are capable of existing not only on the surface, but even to a considerable depth in the interior of bare rocks, at high altitudes where neither mosses or lichens will grow. These nitrifying organisms seem to have been the starting point in the formation of humus, and thus paved the way for the growth of higher vegetation. Some such starting point must have been necessary since the higher plants are not capable of using free nitrogen directly, and not enough nitrogen is present in original rock to support highly organized vegetation. In this connection it is of interest to know that the papilionaceous trees, i. e. those belonging to the order of leguminous plants, also live in symbiotic relation with nitrifying bacteria; and it may be that they have played an important part in the fixation of the nitrogen found at present in such large amounts in the combined state on our globe.

We may sum up the ways in which nitrogen is fixed briefly as follows:

1. Some combined nitrogen, in the form of ammonia and nitric acid, is added to the soil from the air, being washed down by rain to the extent of five pounds to ten pounds per acre per annum. Of this, some at least is a real gain, being nitrogen which has been united to other elements by the action of electric discharges.

2. Organic compounds under silent electric discharges, even of low tension, may fix small amounts of nitrogen.

3. Lichens and similar plants may have the power of using free nitrogen to some extent.

4. Nitrogen is fixed by micro-organisms living in symbiotic relations with soil algae.

5. Some bacteria or other micro-organisms fix nitrogen independently of higher plants.

6. Root tubercles.

Since very little if any gain in combined nitrogen is ordinarily observed in soils in which no leguminous plants are growing or have just been grown, it

is safe to say that the first five means of fixation just mentioned are at present producing but little practical effect upon the nitrogen of the soil. Now, at least, root tubercles seem to be the greatest means of nitrogen fixation.

The fixation of free nitrogen by purely chemical means has not yet been accomplished, but it is apparently within the realms of possibility. Great numbers of compounds, formerly thought to be produced only by life processes, are now made synthetically, either from elements or very simple inorganic compounds; so why is it not possible that there awaits the science of chemistry in the future the discovery of some method of combining atmospheric nitrogen, of which we have an inexhaustible supply (79 per cent of the air) with other elements, such as calcium and oxygen, which are also abundant, and so putting it in a form to be readily used by plants, even without tubercles? If a reasonably cheap process of fixing free nitrogen by chemical means is discovered it will completely revolutionize agricultural practices.

In connection with root tubercles considerable attention has been given to the study of clover-sickness of land, and although no definite results have been obtained, it is thought that the phenomenon may yet be found to bear some relation to the bacterial conditions of the soil. Many facts indicate that clover-sickness may be due to some disease or parasite of the bacteria or to soil conditions unfavorable to their development.

The latest development along the line of nitrogen fixation by tubercles is an attempt by Nobbe, of Germany, at its practical application. Following out Hellriegel's conclusions that each plant has its own particular kind of nitrogen fixing organism, he attempted to make pure cultures of the bacteria of each leguminous plant so that a field in which it was wished to grow that crop might be easily and surely inoculated with healthy bacteria of the proper kind. It has long been known, and advantage taken of the fact, that a top dressing of soil on which a certain leguminous crop has been grown well, will if applied to some other soil on which it is desired to grow that crop, make the thriftiness of the crop more certain. This is due to the organisms applied with the dressing. It must be borne in mind though, that this is very expensive, and at the same time there is danger of introducing noxious wild seeds or diseased bacteria or parasites that prey upon them. All this would of course be avoided by the application of pure cultures.

Nobbe took strong plants, carefully selected the best appearing tubercles, cleansed them perfectly and carefully introduced their contents into a medium of prepared gelatin. Several series of cultures were made by carefully selecting material from successive ones until the bacteria were thought to be pure. He then made experiments, with good results, by inoculating soils on which crops were grown.

The preparation of the material is now conducted on a large scale, and cultures are made for twenty different kinds of leguminous plants. The cultures are put up with gelatin in air tight bottles, and labeled with the name of the plant to which they are supposed to be best adapted.

The preparation has received the German name of "nitragin" from the Latin *agere*, meaning to make active, but it is an unfortunate name for English speaking people as it is easily confused with "nitrogen." It should be distinctly borne in mind that "nitrogen" is an element but that "nitragin" is a preparation containing tubercle bacteria.

Nobbe found that the nitragin for any one plant would inoculate others of the same family, or, perhaps in some cases, plants of different yet similar families, but the result was not in all cases as good. It was found further that the nitragin for plants of one family was generally a total failure on plants belonging to widely differing families. Substantially the same results were obtained in trials with nitragin at the University of Illinois in 1897. This was the most extensive undertaking along this line which has yet been made in the United States.

These results indicate that there are certain species of bacteria having a preference for certain plants. Nobbe thinks that the bacteria are probably influenced by the particular host on which they live for several generations, so that they have a strong affinity for it and a dislike for others, which per-

haps they would have lived with before. This is far from improbable, nor is the idea unworthy of thought and experiment, that perhaps by careful culture there may in time be developed bacteria, which will perform for cereal crops what they now do for legumes. This, with our present views of evolution, seems to be possible, and if it is accomplished it will be an immense boon to agriculture. So far experiments have been tried with this in view but without success.

The importance which may attach to nitragin has yet to be asserted since its introduction has but just commenced, but the probabilities are favorable that it will become of great practical value under certain conditions of soil and cropping.

Nitragin is best applied in one of two ways:

1. By adding it to water in which the seed is soaked just before planting.
2. By inoculating a small amount of soil which is then sowed over the field and harrowed in. In any case care must be taken not to expose the nitragin to the action of sunlight, as it is well known that sunlight is very destructive to bacteria.

The cost, aside from labor, of applying nitragin is estimated at less than \$1.25 per acre, while nitrates cost nearly \$30 per ton. From this it appears that if the action of nitragin proves to be a success it will be a great saving in expense for fertilizers.

We have seen how the commencement of our hoard of combined nitrogen for plant food was made and how its supply has been kept up and increased, but the present state of our soil nitrogen has a very serious aspect. As far as our present knowledge of the subject indicates, the process of nitrogen fixation is not now going on as rapidly as the soil nitrogen is exhausted. In other words, the agricultural productions of the present, as far as nitrogen is concerned, seem to be mainly dependent on previous accumulations and are not coincident with a corresponding restoration of nitrogen from the free to the combined state. If this state of things continues the Lord's words to Cain may yet be fulfilled on us "When thou tillest the ground it shall not henceforth yield unto thee her strength." The most practical means of avoiding such a catastrophe seems at present to be the fixation of nitrogen by root tubercles. Our knowledge of this process and its application is constantly increasing and promises to be of great use in the future in keeping up the supply of soil nitrogen. Every farmer owes it as a duty to himself and coming generations to make prompt and careful use of all the practical information acquired in regard to the use of nitrifying bacteria as a means of increasing soil fertility.

A. D. Shamel, of the class of 1898, editor of "Illinois Agriculturist," was introduced, and submitted a paper, being a report of his own experiments in the fields of the University farms in the summer of 1897, entitled "Kinds of Cultivation for Indian Corn," which was as follows:

KINDS OF CULTIVATION FOR INDIAN CORN.

By A. D. Shamel, class of 1898.

During the past summer a number of experiments upon the effects of different kinds of cultivation have been carried on at our experiment station. The object was to determine the effects of different depths of cultivation upon the growth and development of corn; and further, to find what influence several of the most important cultivators used by the farmers have upon the moisture of the soil and the yield of corn, together with a test of their efficiency in removing the weeds and leaving the soil in the best mechanical condition.

In an experiment with the different depths of cultivation it is obvious that in order to secure reliable results we must use the same implements in each of the different depths, as otherwise the differences in yield might be the result of the depth of cultivation at all, but to the implement used in the process of cultivation; and in order to get some accurate standard of comparison

the experiment was so planned that four rows of each kind of treatment extended the whole length of the field, divided into nineteen equal divisions or plats, so that any difference in results due to changed conditions of soil could be detected. The results were found by taking the yield of each separate plat, after which the yield of the nineteen plats were added together and divided by nineteen, thus giving the average yield of the whole number of plats. The weight of ears, weight of stalks, and number of ears, were found for each plat.

Alongside of these different kinds of cultivations were two sets of plats of four rows each, treated in the ordinary manner of cultivation, and under the same conditions as usually practiced on the farm.

Without doubt the most important factor in the growth and development of the corn plant is the amount of moisture supplied to the plant by the soil through the roots. One of the fundamental reasons for cultivation is the conservation of moisture in the soil. In such a climate as is found in the corn-growing section of the United States, any system of cultivation that will prevent unnecessary loss of moisture from the soil during the summer season, when water is most needed by the plant, is of much greater value than that kind of cultivation which has as its object simply the removal of weeds, with no care as to the leaving of the soil in a good mechanical condition, or the conservation of moisture.

Without knowing the actual amount of moisture in the soil during cultivation, an erroneous impression might be gained of the effect of cultivation upon the conservation of moisture from a survey of the yield alone. For instance, we have found that root-pruning is very injurious to the plant and reduces the yield. Now if we did not know the amount of this injury we could easily be led to believe that the reduction in yield under a separate system of deep cultivation was due to the loss of moisture alone or in great part, and not to the effect of root-pruning at all. In fact, this is the general impression today among our farmers.

The determinations of moisture were made as follows: An auger 1 $\frac{3}{4}$ inches in diameter and with a handle four feet long, was used for taking samples. The samples were taken to three depths—9, 18 and 27 inches. Each depth was placed in a separate jar and tightly sealed to prevent loss by evaporation, labeled, and taken to the laboratory. Here the samples were emptied into regular drying dishes and carefully weighed. They were then placed in the drying oven and dried for twenty-four hours at a temperature of 212° Fahrenheit, after which they were again weighed, the loss in weight being the amount of moisture in the soil available for plant food. The percentage of moisture was then calculated for the three depths, thus giving the percentage of water in both the surface soil and the subsoil. The samples were taken once a week during the entire season, and the figures here given are the averages for the season.

Another important factor in any system of cultivation is the rate of growth. It has been found that some systems of cultivation retard the early and vigorous development of the plant by adverse soil conditions when the plant most needs the most favorable circumstances for growth. Other kinds of cultivation favor the early development of the young plant. An instrument was invented to measure the growth accurately. It was a board 1x2 inches and 8 feet long, hinged on to a solid block 2x2 inches and 14 inches long, which was driven into the ground by the sides of a typical hill. The measuring part just reached the surface of the ground, and was marked off into inches and half inches. The measuring was done by drawing the longest blade in the hill up along the measuring post, and the height was then noted. An average blade was then measured in like manner, the average of the two being the average height of the hill. This measuring was done at 8:30 a. m. and 6:30 p. m. every day during the growing season. Each set of plats was provided with a measuring implement, and when not in use the measuring post was laid down alongside the row, thus being out of the way of the cultivator, while the solid base prevented errors in measuring from moving about.

We would say, then, that in our considerations of the kinds of cultivation, we must refer to the amount of moisture in the soil, the rate of growth, and further, to the effect of root-pruning, which subject will be considered later on in the discussion.

The yields from the different depths of cultivation were as follows, being the total of nine plats in every case:

	Two inches.	Six inches.	Four inches.
Weight of ears.....	466½ lbs.	437 lbs.	466 lbs.
Weight of stalks	465 lbs.	431 lbs.	485 lbs.
Number of ears.....	1,003	1,168	1,086
Per cent. of moisture.....	461 lbs.	468½ lbs.	474 lbs.

The implement used in this experiment was especially constructed with a view to maintaining a constant depth during cultivation and to allow of varying this depth at will. The cultivator was the ordinary small shovel cultivator, four shovels on each side, which were so braced that there was no spring, in order that a constant depth might be maintained. For each set of shovels there was arranged a broad rimmed light wheel, which ran along the surface of the ground behind the shovels, and which could be easily adjusted up or down on a vertical shaft. By experimenting raising the wheel up and down on the shaft, a position was found at which the shovels would run two inches deep, another position at which the shovels would penetrate four inches, and another at which the shovels would penetrate the soil to a depth of six inches. By means of a set-screw the wheel was easily set so that the shovel would run at either of these depths and a constant depth be maintained.

The most noticeable fact in the above table is that although the weight of ears in the plats cultivated six inches deep is much less than in either two or four inches in depth and about equal to the percentage in the four-inch depth. In the first place we must conclude that the size of the ears has been very materially reduced from some cause—in all probability from the effect of the cultivation. The shanks of the cultivator became clogged during the last cultivation with the small fine roots which the shovels tore up during the cultivation. This was true to a less extent in the four-inch cultivation and the amount of roots was hardly noticeable at all in the two-inch depth. These facts would seem to indicate that a severe root pruning had taken place, which reduced the size of the ears and the weight of the stalks. In the second place the deep cultivation, although causing a severe pruning, actually contained more moisture than the shallow cultivation. The weeds were removed perfectly, but the surface of the soil was left in a bad condition at the end of the season.

In the four-inch cultivation the yield in weight of ears and in number of ears is about equal to the yield from the two-inch cultivation. But we find that the percentage of moisture in the four-inch depth is much greater than in the case of the two-inch depth. How can we explain the equal yield in this case? By the fact that although the four-inch depth conserved a great deal more moisture than the two-inch depth, at the same time it pruned or cut off many of the roots and in this way reduced the yield.

During the early part of the season the young plants grew much more vigorously on the six-inch depth than on either of the others. This was due to the bursting and tearing up of the soil by the deep cultivation, letting the warm air circulate about the roots of the young plants. The corn on the four-inch depth also grew more vigorously than on the two-inch cultivation, showing that the loosening up of the soil is a good thing for the young plant. In co-relation with these facts was the perfect removal of the weeds by the deep cultivation, while the weeds had to be removed twice during the season with a hoe in the two-inch cultivation. Another important result of these cultivations was the fact that the deep cultivation left the soil ridged up along the rows, so that during heavy rains the water washed away a good deal of soil between the rows, and the ridges were a serious obstacle in the way of

preparing the ground successfully for the succeeding crop. The shallow cultivation was free from this defect and the soil was left level and in a good condition for passing through the winter.

Turning now to the consideration of the other methods of cultivation we will study the effect of ridge culture, mulching, the Tower cultivator, six-inch big shovels, no cultivation, deep early and shallow late and shallow early and deep late, ordinary, and a set of plats upon which weeds were allowed to grow unmolested. We will first consider the mulched, Tower cultivator, six-inch big shovels and ridged. The yields were as follows:

	Mulched.	Tower.	6-in. shovel.	No cultivation	Ridged.
Weight of ears, lbs.....	551 $\frac{1}{4}$	441 $\frac{1}{2}$	444 $\frac{1}{4}$	490	446 $\frac{3}{4}$
Weight of stalks, lbs.....	484 $\frac{1}{8}$	453	354	489	405
Number of ears.....	1,149	1,129	1,074	1,037	979
Per cent moisture.....	495 $\frac{1}{2}$	479	469.4	466.7	489

The mulched yielded more than any of the cultivated plats. The mulching was done just after the corn appeared with grass cut from a meadow, and when fully settled was about four inches deep over the plats. During the early part of the season the growth was slow, the color of the corn unhealthy and the plants appeared stunted. During the middle and latter part of the season, however, the corn grew rapidly, outstripping the cultivated, until at the end of the season it stood on an average over a foot above the corn on adjoining plats. The tardy development during the early part of the season was no doubt due to the cold, damp ground which dried out and warmed up only very slowly through the heavy mulch. But when the corn most needed moisture, during the middle and latter part of the season, the mulch prevented rapid evaporation of the moisture and by reason of the perfect root system of the corn the plant was enabled to use this high percentage of moisture. The actual amount of moisture under the mulch was very much greater than in any of the cultivated plats. At any time during the season a moist soil could be found under the mulch. This induced a strong root development near the surface and these plats of mulched corn withstood the storms better than the cultivated without exception.

In the case of the Tower cultivator, or the common "gopher," the yield was very considerably reduced. The two broad knives which did the cultivation cut off many of the roots, especially the large roots near the surface, and in some cases on account of the unwieldy frames in which the knives were set, some of the stalks in the hill were cut off entirely in spite of the most careful handling. The soil was packed by this cultivator and left in bad shape for future crops. The weeds were not fully removed between the hills and the plats had to be hand weeded during the season. Altogether this cultivation was not fully satisfactory.

The ridge cultivation was done with a disc cultivator. The plats were cultivated shallow twice in the early part of the season, then ridged at the last cultivation. The cultivator threw up a ridge about seven to nine inches high. After a severe windstorm during the latter part of the season, after the ridging was done, the corn upon these plats was broken down quite as badly as the other cultivations, and the stalks did not seem to have derived any benefit from the ridging process. The yield, as is seen from the table, was very low, showing that the roots must have been cut off or the stalk injured from the ridging process. The ground was left in the worst possible condition, the deep furrows between the rows acting as ditches through which the water during a heavy rain washed away the soil. Moreover, it is almost impossible to plow such a field, and when plowed the work is done in bad shape—the whole surface of the plowed ground being uneven, owing to the ridging process.

In the cultivation six inches with the big shovels there was a low yield, due, as in the previous deep cultivation, to the root pruning. Here, too, the ground is left ridged, although the weeds are removed perfectly.

In the no cultivation plats the weeds were removed with a short hoe which just scraped the surface of the ground. We find here a high ridge with a low percentage of moisture. The moisture was lost through the absence of cultivation; but the perfect root system, which was uninjured in any way, made use of all the moisture in the soil, and as a result gave a high yield. It might be argued from this that cultivation is not needed, but we must take into account the labor of cutting off the weeds and at the same time the loss of moisture, which would make it impracticable on a large scale.

The yields for the other cultivations were as follows:

	Ordinary.	Deep, early.	Shallow, late.	Weeds.
Weight of ears, lbs.....	474 ¹ / ₄	478 ¹ / ₂	480 ³ / ₄	242 ¹ / ₄
Weight of stalks, lbs.....	466	463	446	346 ¹ / ₂
Number of ears	1,175	1,158	1,129	765
Per cent moisture, lbs.....	455.4	472.7	472.4	328.4

In the cases of the deep early and shallow late and of the shallow early and deep late we find little difference in yield. The amount of moisture is nearly the same. The cultivation in the deep early was done by cultivating six inches deep twice early in the season and shallow or two inches deep the last time. At the time of the second cultivation the cultivator should have been set shallow as four inches so as not to do so much injury to the roots. In the shallow early the cultivation was done by cultivating twice shallow during the early part of the season and six inches deep the last time. Now the deep early tended to conserve moisture, but the second cultivation cut off many of the roots; while the last shallow cultivation left the soil in good condition, but tended to allow a loss of moisture. In the shallow early the moisture was lost, but a perfect root system was developed which developed the plant until the time of the last cultivation when the deep cultivation cut off the roots and in this way reduced the yield. It should further be noticed that both yields were very high, but that both systems of cultivation contain a bad element which tends to neutralize the good effect of the cultivation, viz., high percentage of moisture.

In the weed experiment no cultivation was done and the weeds were allowed to grow at will. During the early part of the season the corn grew vigorously, and until the middle of the season no difference could be detected between the weed plat and the cultivated. But during the dry weather of July the corn began to show signs of injury from some source, and at the end of the season the ears were all nubbins and most of them were diseased in some way or other. The yield shows a remarkable decrease together with a low percentage of water in the soil. This all goes to emphasize the importance of moisture to the plant so that a slight difference is very noticeable. The weeds used up much of the moisture, leaving only a very reduced amount for the corn plants, resulting in a very low yield indeed.

In order to appreciate the effects of root pruning I will introduce the results of some experiments carried on last summer at the station. One plat was devoted to root pruning of different depths, and was so arranged as to have one row of root pruned, then one row of not root pruned, and so on through the plat, in this way comparing the effects of the pruning with the corn that was not pruned. The pruning was done with a hor shaped instrument, the blade being ten inches wide and with a long handle for convenience in working. On the blade was fixed a clamp that could be fixed at any distance on the surface of the blade. For instance, it was set two inches from the edge of the blade; the pruner was then set down six inches from the side of the hill and pressed down firmly with the foot. In this way all of the roots were cut off to the depth of two inches. The pruner was then set in like manner on the other three sides of the hill, cutting off all the roots six inches from the hill on every side and to a depth of two inches. To get a different depth the clamp was set at different heights on the side of the blade.

The pruning was done three times during the season, just after each cultivation, so the ground would not be disturbed by the pruning process.

We will now consider the yield from the root pruned in comparison with the not pruned.

	Roots pruned 6 in. deep.	Not pruned.
Number of ears.....	123	132
Weight of ears, lbs.....	38 ³ / ₄	60 ¹ / ₄
Weight of stalks, lbs.....	31 ³ / ₄	47 ¹ / ₄

We find that although the number of ears is about equal the yield in weight varies enormously. The root pruning to this depth has had a very decidedly injurious effect upon the corn, as is shown by the greatly reduced yield. During the summer the corn on this plat was stunted by the repeated pruning, and especially by the last two operations; so that the final average length was nearly two feet below the not pruned. The corn had a yellow color and wilted easily, showing an unnatural development. The theory of the young roots branching off from the cut ends of the roots and that pruning induces young roots to branch out and thus increases root surface will have to be abandoned, for in such a case the yield would have been equal to or greater than the not pruned.

With the pruning four inches deep the yields were as follows:

	Roots pruned 4 in. deep.	Not pruned.
Number of ears.....	116	146
Weight of ears, lbs.....	51	63 ¹ / ₄
Weight of stalks, lbs.....	41 ³ / ₄	50 ¹ / ₄

We find that the pruning four inches deep has not such an injurious effect as the six inch pruning. During the growing season this plat was ahead of the six inch pruned in size and in all around development.

The two inch pruned yielded as follows:

	Roots pruned 2 in. deep.	Not pruned.
Number of ears.....	144	146
Weight of ears, lbs.....	63 ¹ / ₂	65 ¹ / ₂
Weight of stalks, lbs.....	48	48

Summarizing then the effects of root pruning we may say:

First—Root pruning is very injurious to the corn plant, and the yield seems to be reduced in direct proportion to the amount of roots cut off, or in other words, to the depth of pruning.

Second—These results seem to offer a reasonable explanation of the decrease of yield in the case of the deep cultivations and bring to light one of the factors to be considered in the effects of different depths of cultivation.

Other experiments with root pruning were carried on, the pruning being done late in the season after the last cultivation. The remarkable fact was brought out that this late root pruning reduced the yield almost as much as the root pruning throughout the season, showing that most of the injury is done at the time when the plant is about to set the ears. We could infer from these facts that the deep cultivation during the early part of the season was not particularly injurious to the plant, but that most harm was done at the time of the last cultivations.

By a careful survey of the foregoing facts, we can say that they would seem to indicate:

First—Deep cultivation tends to conserve moisture. It acts as a root pruner, which is very injurious to the plant, especially at the last of the season, and this injury varies directly as the depth of the cultivation. Deep cultivation is the best method of ridding the soil of weeds. •

Second—Shallow cultivation is not so useful as deep cultivation for the conservation of moisture, but it tends to preserve a perfect root system.

Third—That mulching conserves moisture and leaves a perfect root system; ridge culture is not beneficial and leaves the ground in bad condition for following crops; and that the Tower cultivator is not a very good implement for cultivation.

Fourth—A combination of deep and shallow cultivations is best—deep in the early part of the season to remove weeds and conserve moisture, and shallow at the time of the last cultivation, in order to leave a good root system.

Prof. E Davenport, Dean of the College of Agriculture, was then introduced and read a paper, the reading of which was frequently interrupted by applause, entitled "Discussion of Relations Between the Farmers and the State Colleges," which paper was as follows:

RELATION OF THE FARMER TO THE STATE COLLEGES.

Two events that have occurred within the recollection of men yet living have influenced profoundly the lives of all the people and are revolutionizing the educational policy of the world. I refer to the extinction of slavery and to the birth of science. There may seem to be little or no relation between these and the farmer. I think it is intimate and direct.

Slavery presupposes a leisure class that has somehow gained the ascendancy. It effectually prevents the formation of a "middle class" industrious, thrifty and intelligent, because it competes with slaves only and the competition is ruinous. Slavery puts no premium upon intelligence; it stifles ambition among the enslaved and encourages vice among the masters. Its abolition was the necessary consequence of the free school. Then was recognized the essential value of human life and the right to equal opportunity. It may have been rough upon the master—indeed it was, for here was a class habitually dependent upon the labor of others for the commonest necessities of life—a thing abnormal because possible to but a limited few, and pernicious in its effects upon both master and man. With slavery removed labor of some sort became an essential condition of existence, and therefore honorable, and a middle class that we call the common people appear and prosper. Learning is no longer the prerogative of a few and labor no longer the synonym of ignorance.

Previous to the birth of science man directed his attention and thought almost exclusively to his own affairs. He believed that the proper study of mankind is man. Learning was to him, first, a knowledge of his conflicts, which, by courtesy, we have called history; second, a discipline in current habits of thought which we call philosophy; and third, a study of methods of expression which we call literature. Thus learning became synonymous not only with culture, but with leisure and freedom from the ordinary cares of the world. It is not strange that man sought an elixir of life to prolong indefinitely an existence that was intensely spiritual, always fascinatingly varied and beautiful, and childlike in its freedom from the hard conditions of life.

The search for this elixir led man outside of himself and into a study of the material world and of the great laws of creation, and science began to be discovered. He learned the lessons taught by nature. He began to realize that the material world was capable of better service than it had ever ren-

dered him; that the forces of nature would make him better servants than his fellow men; that there is a world and a relation of things to which he had been oblivious. Investigation took the place of speculation; belief of superstition; invention of oppression, and man found not so much that which prolongs life as that which enriches it, and makes a day in the twentieth century worth a thousand years in the days of Abraham.

The findings of science have elevated the human masses and enriched the world's thought and knowledge beyond the power of language to express. There are no new fields for action, new products of human activity; new hopes and new responsibilities. As relations have become more complex there are more things to be learned, and the average human being, hitherto without hopes or prospects, has emerged from his lethargy and taken on the aspect and energy of a man. We have reached a point in the development of the human animal from which future progress will be most rapidly made by the elevation of the general mass, rather than by the extreme development of a favored few.

To educate a new generation is to put it in possession of the world's knowledge and habits of thought and the subject matter of such education is necessarily the same that has engaged the attention of the generations immediately preceding. When a new fact or a new principle is discovered it is immediately put to service, and, presently, affects the whole fabric of human institutions. It becomes at once a part of the thought and the life of the people and goes into the schools as one of the things to be learned by the oncoming tide of humanity.

The field of scientific research is the field of nature in which the common mass of humanity lives necessarily in intimate relations. That is why the achievements of science have meant so much. It has touched the life of the masses. It has entered into the occupation of man. It has increased his productive capacity an hundred fold, and it has put a premium upon exact knowledge. It has vastly increased the sum of human knowledge and by the same amount the subject matter necessary to a liberal education. Education is no longer a luxury; it is become a necessity. It needs more preparation to live than it once did, because life means more to the average man than ever before since the world began. If it be true that education has taken on a more utilitarian flavor, it is also true that it has brought a degree of culture to the masses that was never possible under the old regime. It is true as well that it has compelled all men whatever their training to pay decent respect to the serious business of self support.

As the extinction of slavery allowed the development of a great middle class so the findings of science have made their occupations respectable and put a premium upon exertion and higher efficiency. The last step in this later evolution of man through the elevation of the mass was the establishment of the State colleges, wherein any man may obtain at public expense an education that will fit him for any calling and for citizenship and a cultured life as well.

Considered from the standpoint of evolution the establishment of the free State college means more than any other institution known to man save only the Christian religion. Without it a price is fixed upon education; a condition is imposed that practically prohibits the masses from a decent preparation for the affairs of a complex life. With it each generation gets a fresh new start, and the individual is limited only by his ambition and his capacity.

The farmer owes an allegiance to the state colleges in all their departments because he represents distinctively the great middle class that is most benefited by these schools where everything useful is accounted of value; where education is not sold at a price but where the common citizen may fit himself to live. Further he owes these colleges a special allegiance for another reason. The land grant colleges were the first and are yet the only ones in any sense organized for the benefit of agriculture as a business, or for the betterment of rural people as rural people. It is the land grant colleges that first stood for the great principle that a man needs two educations; one to fit him for business, and the other to fit him to live. That the farmer recognizes at least a part of this allegiance and responds to it will be evident when we note the fact that, difficult as it has been for him to reach the high schools more than

three-fourths of the students of this university in all its departments come from the farm. The farmer is availing himself of the opportunities for higher education. What he has been slower to respond to is the opportunity to benefit himself in his own calling, but judging by appearances here and elsewhere he is beginning to do that.

The schools have long been willing to draw upon healthy country blood to stock the various occupations and professions that have passed as genteel, but not until the day of the state colleges and within our own recollection have our educators planned to preserve the supply and purify the source of the best blood of the nation. They only are interested in him for his own sake as a farmer and a man, a human being and a citizen, the follower of a useful and necessary occupation and the father of good men and women. When they shall prepare to do as much for women as for men and when their offerings meet general response then will the state colleges begin to do their perfect work.

Affairs are getting so complex and things move so rapidly in these days that we find it difficult to preserve our relations and readjust ourselves to a constantly changing environment. But we may well ask ourselves if we fully realize what agricultural education means in this nineteenth century and what it will mean in the twentieth? I hear men gravely discussing whether a man will remain on the land after you educate him. I find those who are satisfied that agricultural education is a failure, because it has been tried for thirty years and the colleges in agriculture are not overflowing. Christianity has been abroad for well nigh two thousand years and it can not be said to be exactly popular yet. The churches still have additional seating and yet few of us would be willing to deny that things are drifting strongly in that direction.

That the first effect of popular education should be to draw the most ambitious young men from the country and to deprive it of its rightful share of the best young blood was most natural. Here were all the old-time subjects of the schools opened freely to the masses. These subjects that had been taught for generations, many of them for centuries, had each a literature rich in the best thought of the best scholars. The subjects were developed, the best methods of teaching well understood and fully established, and skilled teachers were readily had.

On the contrary as to agricultural education; some laughed at the presumption of the thing, and would-be friends felt compelled to wonder in their secret minds if the term was not a misnomer, and the idea a fantasy. There were neither methods, teachers, nor literature, and it is hardly strange that agricultural education has had a struggle.

When the first agricultural college was opened in Michigan in 1857 there was not a single text-book in agriculture in all the world. There was not a book bearing on agriculture that modern investigation finds even reasonably correct. Darwin's first work was not yet issued, and our friends the bacteria succeeded in concealing their identity for ten years thereafter. Chemistry had only shed a dim light on a few of the processes of agriculture, and carbon was firmly believed to be a valuable fertilizer. I never look upon that old first building dedicated to agriculture or consider that wild pioneer project without amazement, that a college should have been founded on so little teachable material.

It is safe to say that no literature has increased more substantially nor more rapidly than that of agriculture during the last twenty years. Scarcely a new fact in science but has an important bearing upon rural affairs. Besides that, more than forty stations in this country and many abroad by their investigations are adding to agricultural technical literature faster than any man can read, or even fully index.

Ten years ago the farmer passed as a practical man, who, of course, knew his business and he affected small regard, if not open disdain, for "book-farming." All this has changed. Farmers, like others, have learned that a fact is a fact no matter who found it out, and that it pays to deal as largely as possible in accordance with established principles. The better farmers today are careful thoughtful men who make earnest inquiry concerning what they do not understand, and it has been many months since I have read a letter

that contained even a suggestion of an undercurrent of the sarcastic scepticism that formerly characterized most references to professors and books.

Agriculture is to have a future and agricultural education is a coming thing. I have said that the present generation of workers would wear themselves out in talking these things in season and out of season and be gone before the day of general and widespread interest in agricultural education. But the events of the few past years and the remarkable increase in interest leads one to believe that it is much nearer than we have supposed, and that some of us at least may live to see it.

What Illinois shall do for agricultural education depends entirely upon your opinions and what you are willing to do. It is one of the peculiarities of the State college that it is entirely dependent upon the will of the people. You have built up here a strong university in everything but agriculture and you support it well, because more than three-fourths of all our students come from the farm.

I have faith that you will yet do as much for agriculture, which represents your own business, your own interests, your own life. Twice the people of Illinois have been asked to provide special apparatus and buildings devoted to the teaching of agriculture. Twice they have said "No." I do not know why. I do not believe they meant "No" any more than does the maiden in her first answer. We shall ask again, and I have faith enough in the people of this great State, and in the righteousness of our cause, to believe that Illinois will yet do even better than so many of her sister states have already done.

It has been my experience in attempting to secure legislation favorable to agricultural education that other men than farmers have been most susceptible to influence; have most readily seen the need of it, indeed I am obliged to say that for the very idea of agricultural education and for the greatest effort yet made to promote it we are mostly indebted to men of other professions; to teachers like Professor Turner, to lawyers like Hezekiah G. Wells and to statesmen like Senator Morrill. The farmers long resisted and then ridiculed what they took to be an expensive educational fad. They did not know and nobody guessed what science was about to do for agriculture and for the common things of life. Farmers are conservative. This conservatism has been taken by many who do not understand farmers to mean a settled conviction against agricultural education. Farmers are learning rapidly—none more so. As they learn they move. They move slowly, but movement among them means something, and judging from present indications instead of expecting much longer to meet among our own people, as heretofore, opposition, ridicule and defeat, I am expecting very soon indeed, not only a willingness to make the most of the opportunities for acquiring technical information, but upon the part of the great farming public a demand that our colleges of agriculture be equipped, not only to teach the latest and the fundamental facts of agricultural practice, but those things as well that elevate and sweeten rural life for man, woman, and child.

Adjourned until Thursday morning, February 24, 1898, at 9:30 o'clock.

PROCEEDINGS THIRD ANNUAL MEETING OF THE ILLINOIS FARMERS' INSTITUTE.

UNIVERSITY HALL, UNIVERSITY OF ILLINOIS,

THURSDAY, FEBRUARY 24, 1898.

MORNING SESSION. 9:30 A. M.

The convention met pursuant to adjournment, President Moore introducing Mrs. Mary Turner Carriel, one of the trustees of the University of Illinois, as the presiding officer for the morning session.

Mrs. Carriel, in assuming the chair, said:

Ladies and Gentlemen:—It was with great pleasure that I received an invitation to preside at this session of this Institute. I am very much pleased with our program. I have no doubt we shall have a pleasant and profitable session.

The preliminary exercises were begun with music by the male quartette of the Y. M. C. A. of the U. of I., followed with a prayer by the Rev. C. N. Wilder, pastor of First Presbyterian Church, of Champaign, Ill.

There was a call for F. M. Higgins, of Ottawa, Ill., to which he responded with several comic songs.

The Chairman: We now come to our program, which is of great interest to all men and women and to all wives and daughters.

It is our duty to have a more practical knowledge of the domestic arts; to place our domestic world upon the high plane of health and economy. One of our neighbors said to me awhile ago—a girl who was once in this University—and it seems to me a girl who has once been under the influence of this University goes out among the people with higher ideals of true womanhood—she said to me: It is my duty to look after the food of my family, not only to see that it is well and palatably cooked, but that it is the right kind of food for the individual needs of each member of my family. If my husband goes to his office from an uninviting breakfast, coffee unpalatable, he is but poorly prepared for the duties which come before him that day. And if he fails, it is my fault and not his. And if my children go to their school room with breakfast unsuited to their

individual needs, that morning they are, of necessity, irritable and negligent, and it is my fault and not theirs or their teacher's, if they have trouble in their school room.

We need the influence of that skill among all of our women. It is due to the ignorance of womanhood and not to their consciousness, or self-consciousness, or indifference, that this spirit is not found in every home.

And it is to the men who are interested that we turn for help at this time to assist in procuring a domestic science building on our State Fair ground, where object lessons can be given each year in the proper and scientific preparation of food. We have only to unite, as intelligent women of this State, and ask for that building, and we will get it. The time has come now to press it upon the attention of those in position to help us and we will succeed.

I hope after these questions have been brought before us this morning that each delegate, from each Congressional District, will help us to form such a domestic science club as will enable us to spread our influence all over our State.

I have the pleasure of now introducing to you Mrs. H. M. Dunlap, of Savoy, Illinois.

Mrs. Dunlap read a paper, entitled "The Housekeepers' Club," as follows:

THE HOUSEKEEPERS' CLUB.

Read before the Illinois State Farmers' Institute by Mrs. H. M. Dunlap, Savoy, Ill.

The Housekeeper's Club or Association has become a familiar name and topic in this vicinity, as for the past year there has been one in our midst that has accomplished much good in turning the minds of many in the direction of the home and all the word implies.

This club is the direct result of a Farmers' Institute, and many of us feel grateful to that organization for the inspiration that has worked together for so much good.

A year ago, at the Champaign County, Illinois, Farmer's Institute a paper was read on the subject of "Foods for Man," when at its close a member of the audience arose and asked that a committee be formed to ascertain what could be accomplished towards carrying out some of the suggestions made in the paper.

A committee was appointed, consisting of seven women, part from the towns and part from the rural districts.

As a result of this committee's work "The Champaign County Housekeeper's Association" was formed and officered with the hopes of so organizing the county that we might have many auxiliaries from the different

townships to the main organization. The main organization has flourished, but the auxiliaries have not materialized as yet, but the coming year we hope to report a number, as the desire is being expressed in several parts of the county for us to send out some of our members that can aid them in forming these auxiliaries.

The object of this club is for the advancement of improved housekeeping art, for the preparation of better and more wholesome and nutritious food, to gain a knowledge and use of the best labor saving utensils and to bring the methods of helpful household economics before the mass of the people.

We have endeavored to make the work of the organization as practical as possible, not expecting papers of literary merit containing theories and not experiences, but practical thoughts and suggestions on all topics that interest the home.

We have a certain topic assigned for each meeting, as bread, meats, eggs, house cleaning, etc. We are now studying "Foods," by Church, and expect to follow with "Dust and its Danger" and "History of the Bacteria."

We have a physical culture teacher who gives us twenty to thirty minutes' instruction at the beginning of our meeting. We enjoy them and know they have been and will be very beneficial.

Our membership has reached eighty-six, which we feel is quite gratifying.

Through this association the past year we have had two courses of lectures in cooking in the twin cities. The first through the aid of the Chautauqua Assembly that is held in Urbana we had Miss Florence Saunders, of Springfield, a pupil of Mrs. Rorer's, to give us a week course. The second by the combined efforts of the County Fair Association and Housekeeper's Association we secured Mrs. S. T. Rorer to give us a series of eight lectures. Part of these lectures were given at the fair grounds and in that way we helped many of the farmers' wives to an opportunity that does not come to many.

These lectures were so successful and created such an interest in the matter that the ladies of Urbana, who had been agitating the subject of cooking and sewing in the schools, went to work with added zest, and with the sentiment thus aroused in its favor they succeeded in having it placed in the schools of Urbana. We find there today eight hundred boys and girls taking sewing, and about one hundred and twenty-five—the high school only—taking cooking.

While our club sometimes feels a little discouraged and think we are not accomplishing as much as we should, yet in the aggregate we feel we have much to encourage us for we know at least that cooking has been placed upon a higher plane by many since the science of it has been so finely demonstrated in our midst.

Does it not seem strange to a thinking, earnest mind that all humankind has in the past been seeking for all knowledge but that of how to live; how to care for the caskets that contain the indwelling souls; how to bring the physical and spiritual laws of our being into harmony so that happiness may be our portion instead of sickness, sorrow and woe. But in the evolution of affairs we today find many minds seeking this knowledge that is of such vital importance to all, and I feel assured that the dawn of a better day is before us, whose sunset rays will be cast into the homes of our land, bringing to them health, happiness and a peace past understanding.

Who is to accomplish this work for the homes? Our women. But to do so they must meet and conquer some of their foes.

The first to mention is their conservatism. It takes much thought on the part of many to decide to change their manner of performing their labor; to put aside a recipe of their grandmother's and adopt a more hygienic one in its place; to lay aside habits of eating and doing formed in childhood and assume a more rational way of procedure. Second, lack of education. What does that not mean to us as women? By our ignorance we may place food upon our tables in such a combination and manner of preparation that we are by degrees killing our loved ones instead of bringing to them healthy minds and bodies; by our ignorance of some simple scientific principle in the care of our

sick, we may help to carry them over into their spirit homes when we so much need them here; by our ignorance of the laws governing our physical life we clothe our bodies in such a manner that health can not be their portion, and they do not represent perfect womankind any more than the knarled and knotty tree is not a perfect specimen of its kind.

Ellen H. Richards says: "Women have lacked respect for nature and her laws. They have feared the thunder and ignored the microbe. They have a habit of shrinking at the sight of a toad and they get off a street car facing backwards. Women can not see why water will not run up hill, and they expect hot, foul air to come down from the top of the room and obediently go out of the window. They poke the fire on top and wonder why it does not burn. They have allowed the sink drain to feed the well, and the dark damp cellar to furnish air to the house. In other words, they have too often assumed that what is, is right. They need the influence of the scientific spirit, which tests all things and suspends judgment."

Third, women need to cultivate the power of thought. By placing mind and energy upon present conditions of things many of our burdens could be lightened, for by this power of thought in action many things could be obtained and acquired that we little dream of. Chaos so often reigns in our homes because we lack the thought and power to systematize our work; or, in other words, to bring good generalship to our aid.

Fourthly, women need to cultivate a love for the work of the home, for knowledge that can be utilized there, instead of for that which is to make a show in the world, remembering that the commendation of our loved ones within our homes should be more to us than the applause of the world. The apathy of women as wives and mothers to realize their responsibilities must be overcome by educating them towards the home instead of away from it.

Fifthly and lastly, women many times are too self-satisfied, their own way is perfect; they do not find it necessary, they say, to take up new ways or ideas. How well I remember during the World's Fair of asking a lady I had just met if she had heard Mrs. Rorer lecture. "No; who is she?" she asked. I told her, and spoke of how wonderful it was to see her dress a chicken. Her nose immediately went up in the air, and she said: "I would like to see any one tell me anything about dressing a chicken. I can go catch one, dress it, and have it in the frying-pan in fifteen minutes." I thought she needed such instruction badly enough, with all the ignorance she displayed of the science of food in the remarks she made.

We must educate our girls in our schools and colleges in those things especially necessary to their God-given profession, that of wife, mother and home-maker, and if they have an aptitude for any special line of study after that is accomplished, it would not necessarily debar them from it. There are very few women, whether married or single, but what at many times in life that knowledge could be applied, while much that is given now is never used and is soon forgotten. Let us use common sense in the education of our girls and also for our boys.

As I stand here in the midst of all these beautiful buildings reared for the education of our boys and girls—mostly our boys—my heart is appalled with our responsibility as men and women, that we have not grasped the well being of our natures long ere this and done more for the homes of our State. You think that you are educating the boys that they may acquire the means to obtain and have a home, but how equally as necessary for the girls to have the opportunity of knowing the science of keeping that home after once obtained. So varied and vast is the knowledge necessary in a well conducted home that is it not remarkable it is not appreciated, and that they would rather rear gymnasiums, libraries, stock barns, dairy buildings, green houses and observatories, than build kitchens and give to girls buildings for their comfort, and appliances and instruction in their line of work? Your farmer's boy can come here and take a short course in agriculture, horticulture, floriculture, etc., but have you done anything for the farmer's girl in her line of work? Give to her the opportunity of taking a six months' or a year's course in domestic science, and you will be doing a work for your girls that will live through all eternity and that you will never regret. Bring the science of

home making up on a level with any other science, and don't degrade that which requires as much knowledge as that of the profession of doctor, pharmacist, lawyer, electrician or architect, etc., if it is well done. The knowledge does not come intuitively, as many think, any more than any other knowledge does.

What is education! Horace Mann says it is "the fitting one for life's duties." Does our present system of education do that for our girls? Does life's duties consist alone in knowing how to read and write, to know history, geography, language, higher mathematics, Greek, Latin, and many of the sciences? No! And every wife, mother and housekeeper here will acknowledge that much of what she spent hours of diligent labor over while in school, she has never used or been able to apply in the profession she has chosen of home-maker, and she wonders what is the matter of life. I do not wonder, for what other profession can any one enter upon and make a success of without any special training?

As I view this matter today, I would rather a girl of mine would understand chemistry as applied to food and the care of health and home, the science of botany and zoölogy as related to plant and animal life used, the way to cook and prepare food to bring its highest nutritive value to them, some knowledge of the care of the sick and sanitation of the home, than all the Greek and Latin and higher mathematics that they could obtain. Look at it in a reasonable light, and can you not soon decide what we are to do as fathers and mothers to bring a different order of affairs in our midst.

Now for those that are past their school days and are in homes of their own and are burdened with their ignorance. Ignorance that should not be theirs by right of their education. What are they to do? Right about face and go to work by every means in their power to acquire knowledge that they should know.

I have given this paper today on this subject that you might carry it home with you with the hopes that you cast your influence towards a better or similar organization in your own counties. Women need something to stimulate them to action as well as you farmers. You know that your Farmers' Institutes are of great benefit to you. After attending one you read with a different interest subjects that have been discussed and it opens up new cells of thought that will multiply by use. Equally true with these organizations for women. In my attendance at the Farmers' Institutes this winter I have been more than ever impressed of the work before us in formulating some work and method that will reach our isolated overburdened farmer's wife. I find her coming miles through the mud to attend these Institutes and sitting patiently by and seeing most of the good things talked of and discussed entirely for the benefit of her better half. She does not apparently think but what it is right and does not offer a word of protest, for she still remains in the vortex of public opinion—that men need more knowledge for their professions in life than the women for theirs of home maker.

Our much beloved and recently deceased Frances Willard once said, if she were asked the mission of the ideal woman, she would reply, "It is to make the whole world home-like." How beautiful and true the saying, but will it ever be accomplished until we realize that we must as women master the science of home-making before we can give it to the world?

There are many helps that can be obtained already in this direction and when organizations are established there will be a fountain-head for the dissemination of knowledge to be obtained. They will learn to study and read with a purpose in view.

The Cooking School Teachers' League has formulated a home reading course in household economics and added it to the Chautauqua system of education. I am glad they are making this course public for it is what has been greatly needed. "The idea was conceived originally for the benefit of women in rural districts who have need of this knowledge," and I hope it will be greatly used by them and such organizations as we have here and hope to have all over the State. We have with us today one of the advisory committee, Mrs. Kedzie, of that course of reading, and I feel certain she will speak a word in its behalf. We feel gratified that we can welcome one of such ability, earnestness

and love of the work to our State and that she has come among us today that we may learn of her and shake her hand and bid her God-speed in the work of educating the girls and women of our State in this most wonderful and soul-advancing profession—home-making.

We have a number of excellent periodicals published exclusively for the home and its interests that every woman should endeavor to take and then study. Why should she not be required to take literature distinctly her own that she may keep in touch with improved methods, better foods, sanitation of the home; etc., as the doctor, dentist, mechanic, farmer, merchant and all other professional men feel that they must do? They realize the necessity of having and knowing the best. Why not she? I am saddened many times when I show some of my periodicals to a homekeeper and say, "I wish you would take it." There comes over her face immediately a far-away look, shall I say, one of indifference, or I don't-careness, as much as to say, "You may think I need it, but I don't—I haven't the \$1.00 or the 50 cents to throw away on that." Is it because women have so few dollars or even fifty cents that she can call her own that she can not feel she can spend them that way, or is it her lack of interest in her life work? I would rather think it was the former than the latter, and if the former you, the good men of our land, can rectify that.

I here wish to express my thanks for the encouragement and help given us by some of the men of our State in granting us an opportunity to come among them in our feeble way and present this subject as it has presented itself to us. Never but once have we ever received but the kindest and most courteous treatment, and that was from those that were thinking only of their own interests, and we can forgive them. The good deeds and encouraging words of some of our helpers will certainly follow them and their names will be written in the memory of every woman in our State that has been benefited by the upbuilding and advancement of this work.

In the words of another I would like to close:

"Despise not the day of small things, for no one can foresee to what vast dimensions they may grow. The influence we have set in motion will never cease, though none of us may hope to live to realize its full fruition.

A limpid stream, so tiny that upon a summer's day
A single ox might drink it dry, goes trickling on its way;
Adown the Allegheny's side it gathers strength and pride
Till in Ohio's river fair it stretches deep and wide;
On, on it sweeps, still gaining strength from many a kindred stream,
Till in the Mississippi's tide its garnered waters gleam;
Here borne along with giant force, though slow its current be,
It pours a vast, resistless flood into the inland sea.
Thus may our efforts find success from a beginning weak;
New friends rise up and courage take at every word we speak,
Till step by step and inch by inch our cause shall grow and spread,
That coming generations may be wisely clothed and fed;
That homes shall reach perfection and our farthest goal be won,
While the future reaps the harvest of our work so well begun."

Mrs. Nellie S. Kedzie, of the Bradley Polytechnic Institute, of Peoria, Illinois, addressed the audience on the subject, "Domestic Economy." She said:

I can not resist expressing the pleasure I find in appearing before the Illinois Farmers' Institute. I feel strongly that I have a right to be with you, I am happy to be counted one of you and to be able to look into the faces of the

men and women who have made this great State of Illinois, and with whom I am glad to claim kinship in the State of my adoption. (Applause.)

The measure of the worth of any life in this world is counted by the ability of that life to meet the demands made upon it. Only a woman knows how many and how varied are the demands made upon a woman's life. Only a woman knows the various ways in which she must be prepared to meet those demands; and only a woman knows the struggles that every woman must go through in order to make herself strong and wise and true in carrying on the work that is put into her hands day by day.

Last night one of your speakers said that the time had gone by when education was counted a luxury. That it is today a necessity. And that remark brought to my mind an incident that happened only a few years ago, when there came into my office a tall, ungainly young man. He said to me: "I want to put my sisters in school. My father and mother are dead. I have two young sisters left in my care. I

MRS. NELLIE S. KEDZIE.

know that nobody is thought anything of now-a-days who is not educated and my sisters must not be thought less of than other people. So I have brought them here to see if I can not put them in your school and then go to work in order to keep them here until they shall have an education." I said to him, "But what of your own education, can't you go to school with them?" And he said, "No; because there isn't any money but I think I can keep them here and when they are through school and have their education then I will go away where I won't be a trouble to them."

He put those girls in school and worked for them, and today he lives alone on his little Kansas ranch doing his own work faithfully day by day and his sisters have a place in the world where they are counted among educated people. (Applause.) Even that boy on that Kansas ranch thought it absolutely necessary that girls be educated.

Today we find everywhere the opinion prevailing that girls must have an education. The only question is, just what kind of an education must they have. It has not been a great many years since the thought was strong that all a girl needed was accomplishments in the way of a little music, and a little embroidery, and a little "handiness" in certain ways. She must know something about how to make the dainties of the household, but so far as any further education was concerned, it was not necessary, because she was only a woman and by and by she would marry and settle down and then what good would the education do her or any one else? But the time came when girls began to knock at college doors. The doors were opened a little at a time until a few girls slipped in, where only their brothers had been before, and by and by the girls showed these brothers that they, too, could learn something; that they did have brains; and that when they were put side by side with their brothers, it wasn't always the brother who went ahead. I heard some say, the other day, in speaking of college life, it is not now always wise to say nowadays, "The girl I left behind me," but in many cases it is more truthful to say, "The girl who left me behind." (Applause.)

And so the girls were given some training and some learning and soon the world of men began to realize, strange as it may be, that the women had something to do with the bringing up of children; that the strength and in-

telligence of the mother was apparent in the development of those children. Then came this thought into the world of education, "Why shouldn't we give a girl something she can use by and by? Why teach our girls only books? Why not teach them something of the duties they will be required to perform in life's work? It has been said, we have taught words long enough, let us teach things a little while." So the thought grew and grew until today we find in our girl's education a knowledge of domestic economy. We call it domestic economy because it is training for domestic life, which is truly woman's world. It is the best world into which a woman can step. As domestic economy grew to mean something, it came into the life of all of our girls more or less, and today I am glad to say that no girl stands up and says I am happy that I know nothing about housework. But today the girl who knows most about domestic work is the girl who is strongest and wisest and proudest. (Applause.)

There had already been cooking schools put into some of the states of our Union, but it was left for the agricultural colleges to make a course of study into which they put domestic economy, and in which they said, We will teach our girls something of the duties they will have to discharge in life, just as we teach our boys something of agriculture and horticulture to be used on the farm.

I stand on historic ground, when I come to Champaign to speak about domestic economy, because Illinois, Kansas and Iowa were the first three states to begin the work of domestic economy in agricultural colleges.

Today, as you look out and examine the records all over this country, you will find in almost every agricultural college where girls are admitted there is a course in domestic economy.

In Kansas there stands a beautiful building, built by the Legislature and called the "Domestic Economy Building." In Iowa, today, there is a good, strong department in domestic economy, and, I am proud to say, it is presided over by one of my Kansas girls.

The work has grown rapidly. I was very much pleased to find it in the public schools of England. In every shire there is a supervisor who goes about keeping the teachers up to the required standard in their teachings of sewing and cooking. They do not call it domestic economy because they have not reached that point over there. But they are teaching sewing and cooking, which are the elements of domestic economy and teach them well. For these English people know that the strength of their country is not in broad acres but in the food of their people.

Away up in Scotland I saw them carrying a cook stove into a little old school house up on the heather clad hills and I said "What are you doing there?" and they answered "O, we have always taught the lassies to sew, and now we are going to teach them to cook, for our Scotch people must have good food."

Sleepy old Holland has not done very much in some lines but she has done worlds in others. She began only fifteen years ago with domestic economy, but, today, there are schools all over that country which they call "Kook Skools," and they are teaching their girls to cook while they are teaching them to think.

I found among the English people a rather peculiar idea about us on this side. I suspect they have had it ever since the days of 1876 when we drove them out of our land.

One day a teacher said to me in a peculiar sort of a way, they tell me you cook some things in America that we don't cook over here. Now, what do you eat over there that we don't have? And I said, Why, I scarcely know, but I don't see any pie over here. That is peculiar to our country. She questioned, Why, isn't this pie? and referred me to some beautiful meat pies which were on the table. I said, Oh, no, we call that "meat pie." We make pie of fruit; then I explained to her, as clearly as I could, about a delicious apple pie with a good under crust and a lot of apples in the middle and sugar

and butter and a flaky crust on top, baked just the right brown and cut into big quarters (applause by the students) and she looked at me and said, "Indeed, I should think it would be very nawsty."

So I found that although they teach cooking thoroughly, they are not quite ready to take up with new ideas wherever they can be found and use them as do the American teachers. On this side of the water the work has been going on a little more rapidly, to my notion at least, than anywhere else. The Britishers may not agree with me. But we find, wherever we go, that this spirit of domestic economy is stirring the people and making them think, and, by and by, we shall have it in all of our schools, and we will be unable to go into any state in this Union where domestic economy is not taught.

WHAT IS DOMESTIC ECONOMY?

It is not simply cooking. It is not simply sewing, any more than farming is simply raising cattle. The care of the cattle is a necessary part of farming, I grant you. But merely raising cattle does not make a farmer; nor does the ability to cook make a thorough housekeeper or home maker. Being able to scrub and clean is essential, but is not sufficient to enable a person to make a perfect home. All of these matters must come together in order to make up domestic economy, for domestic economy in its broadest sense means home making—knowing how to make a home; and when our homes are right our nation is safe. No stream can rise higher than its source, and no nation is better than the majority of its homes. So, if we look out for our individual homes—if we know that our homes are well made—our nation will be above question.

The teaching of domestic economy comes along in a girl's work when she is learning other things—when her book knowledge must come, and they must all come within the early years. From the time a girl is six years old until she is twenty she ought to be in school nine months every year. I would say she might well be in school until she reaches the age of twenty-five; but I find a great many people think their girls ought to be out and doing something else by the time they are twenty; I find too the girls have brains enough and are strong enough and wise enough to get through the average college course by that time or a little later, provided they are put at this work nine months in the year. During that high school course or college work every girl can well spend a part of her time in the line of domestic economy, and ought to begin with the training of her fingers, and work out thoughts and principles which she has learned in school.

By the time she has learned to use those fingers well she has learned a large part of the hand work of domestic science. Usually we begin the work with sewing. I do not know as that is any better than to begin with something else. But it is simple and easy and a Tom-boy girl who has climbed trees and scaled stone walls, and fished and hunted, and mounted and driven horses is just the girl to take hold of that sort of work; if her nimble fingers have had to pick out slivers and untangle fish hooks and have had to sometimes improvise ways to get out of mud or to get into shelter when a sudden storm has appeared, she has learned to shape her fingers to certain conditions and she makes a most capital girl to begin with this work in domestic economy because she has learned to train her fingers and use her brain for whatever comes up. We put this girl to sewing. Do you know that I believe one-half the girls in this State thread a needle with the wrong hand? There is a right way and a wrong way to do things. One-half of them are using a lot of superfluous energy that ought to go into something else when they are threading that needle the wrong way. There is no need of spending time and strength uselessly. There is plenty of work for all the strength and energy we have, and the right way is always the easy way for everything. So we begin to teach these girls the easy way to sew. There is not as yet any well established way to teach sewing. I have heard mothers say many times, How does anybody go to work to teach sewing? This is the way I begin: The first thing to teach them is how to thread the needle and how to wear the thimble. A great many girls eighteen years old do not know how to wear a thimble and I fear do not want to wear one if they can help it.

Then we begin with teaching them basting stitches like this (holding up a sample). This is not finished as you see. I asked one of the class if she were willing for me to bring it down here and she said, "Oh, but it is not finished; I don't want them to see it before it is done." But this is just the condition in which I wished you to see it. Then after that comes the seams, the gussets, the plackets, the patches, buttonholes, gathering, and lastly these final stitches. When she got along there through seams she made an apron, and made it all by hand. She measured off the goods, cut the apron and made every inch of it. Most of them carry these aprons home and are proud of them because of their being the first garments made by themselves. Then she takes the gussets and the patches, and the girl who can put in a patch like that, which I now show you, can do the same sort of sewing in her home by and by. Then they learn to make buttonholes and sew on hooks and eyes, and at last some fancy work. These are the first lessons in sewing. In the meantime they have made two new garments and are ready to cut and make any of the cotton garments which will be needed in a home. The next year they take cutting and fitting and they get something in regard to the care of clothing, having had a term of lectures upon clothes and their hygienic value. Then they learn something of the fabrics which we use. And the interest those girls show in just how cotton grows serves its purpose in teaching them to think.

They are shown how wool is prepared and told something about woollen clothes so that when they come to procure garment for their own homes they will know what they are buying. There is something for them to think about all of the time, so that sewing counts in various ways. Every girl makes herself independent of the dressmaker. Every girl can do what she will. If she has the money to hire her dress made, to hire all of the work that is necessary to be done, still she has the ordering of it all and she is not at the mercy of any dressmaker; not at the mercy of somebody who can simply sew for her. She can do it herself, if necessary. And the very ability to do that sort of thing gives her the pride of American independence wherever she goes. (Applause.)

After they have had something of the sewing and along during the time the sewing is being practiced there is preparatory work going on with reference to food. That preparatory work ought to begin with botany. When a girl knows how the plants grow, knows something about what they are made of, knows what part of the plant is used for food and why, knows that out of our wheat we get so much starch, so much gluten, so much bran, and knows something of the way corn grows, she is thoroughly interested in the bread that comes on her table.

When a girl knows how roots grow and how they should be cooked, what kind of heat should be applied in order to burst the starch grain and make it most palatable and most digestible for food; then she will have some knowledge of why she does certain things when she comes into the kitchen. When a girl has learned this much of botany she must then know a little about horticulture. She ought to know something about the way our apples have come to us and how they grow, and the way berries are raised. She ought to know something about the little seed that should be kept out and the little seed that may be left in, and the vegetable garden should be well known in all its products. Then she must know something about chemistry, because when she comes to put her compounds together and take them apart she learns to be exact and to expect certain results. She learns why she puts cream of tartar in sponge cakes, why she puts milk and soda together, why she puts molasses and soda together, so that when she comes into her kitchen laboratory with the food materials spread out before her she has some definite idea of how to go to work. She knows something about their preparation. She knows coffee is prepared in a southern country for our market, she knows where the sugar comes from, she knows what to do with the chocolate bean, and she knows better than to buy Tonka bean extract for the vanilla she wants. When she goes into her own kitchen laboratory she has some definite ideas. She knows on general principles how much water to use to make the food palatable, digestible and pleasant; she knows that on the broad plains in California they take three or four or six or ten days to dry their fruit in

the hot sun. It is then brought here. She knows better than to clap that on her stove and expect to have it suitable for food in one or two hours. She knows if it has taken a week to get the water out of that fruit and leave the flavor it is going to take more than two hours to get that in such shape it will be digestible. So she learns to know those things so well that by and by they come to her almost instinctively. She also learns to purchase meat from the butcher. She knows that when she sends an order to the shop for three or four pounds of "the very best steak" that a dozen or more of the neighbors are sending for the same thing, and they can't all have the "very best steak." She knows that there are not more than eight or ten pounds of this best steak in one steer. She also knows there can be good, palatable dishes made out of the other parts of the animal, and sometimes they are far more nourishing than beef steak. She learns not to broil a piece of chuck and not to roast the round. She learns to braize the rump and to pot roast a piece of shoulder. She learns to broil only the tender muscle to give her a tender steak. She learns to use the pieces of meat to the very best advantage and to use it in such a way that it will be good food for whoever sits at the table she provides.

Among the last lessons she has is the bread, because bread means most to us. She learns that it is much less wearisome to make good bread than to have poor bread in her house. She learns when her yeast is growing properly. She knows how the bread should rise, how it must be baked and how best to keep it in good condition for the table. Our girl learns to do many things and she has all of these and many more thoughts put into her head—and after all, when we have put our young people to thinking, we have done all we can for them. When they can think, then they can go ahead for themselves and we are done.

Then, again, there is the matter of hygiene. Every girl has the right to be well-born. Every girl has the right to have a good, strong body given her. I grant you not all of them have it, but they have not come to their rights when they haven't this inheritance. Then every girl has a duty, a God-given duty, to keep that body well and strong. A woman may be a good and useful woman and may do worlds of work if she be well, even if she has not much education, and has bodily health; but a woman who is broken down in health, whose nerves are gone, whose body is wrecked, who is a burden to herself and her family, can be only a care, and the most pathetic thing I know of in this world is the life of a woman whose nerves are gone, and who has not the bodily strength and health to do the work given into her hands. And so I feel very strongly that every girl ought to be taught thoroughly and well that there can be no blessing like health; that there can be nothing which is more her duty to do than to keep her body well and strong. There is not much reason why our American girls should not be well. There is no reason why every girl should not make of herself a strong woman, and I believe when every girl learns it is just as much of a sin to allow her body to become weakened in any direction, as it would be to take a hatchet and go out and chop her neighbor, that then the time will have come when girls will make themselves into the well women, who will be able to take hold of any task that may come to them. So this matter of hygiene must be given to girls in strong portion.

There are other things that ought to be taught our girls. It is the duty and privilege of every mother to teach her boys and her girls something of the mystery of life; something of the unknowableness of life. Sometimes the mothers don't do this. Sometimes it has to devolve upon the teachers to tell those girls and boys that there is a sacredness in the responsibility that belongs to them and to them alone; that they have duties to unborn generations that they can not forget; that they must look at some of the problems of life in a different manner from the way in which our grandmothers looked at them, because these same grandmothers were many times weakened from poor living and careless habits, until today we seem to find it necessary to brace up this American nation by pouring into it new blood from other nations in order to make our people stronger and give them better health. So this matter of the mysterious responsibilities of life should be taught earn-

estly to these growing girls, that their children some day will not look back and say, "My mother was careless in her young days, and consequently had no strength and no life to give me."

Only two years ago I saw a little woman sitting by the coffin of her only child. She looked up at me and said: "Oh, if somebody had only told me five years ago that I was wearing out my life by the careless things I was doing, by going without sleep, by doing more work than I had a right to do, by robbing myself of proper food and sleep until my body became simply a shadow. If somebody had told me then that my baby's life would go out because she has not the strength I ought to have given her, I would have listened and other girls will listen, if they are talked to in the right way."

So, with hygiene comes to the girl thought, and with thought comes strength, and they must go together. They should take a little domestic economy every day or a little hygiene just as they take mathematics and history and Greek and every day lessons in science, until when the girl goes out of the college she has thoughts of her own and ability in her fingers to carry out her thoughts.

You wonder, perhaps, if all of this is worth while. Look out over the country and see if it is worth while, see what our grandmothers have done with their hands and hearts full. We, today, must do better work than our mothers or grandmothers did or we are not living up to our privileges. They had their hands full of all kinds of work. We have ours full still for the world has grown larger and is much fuller of work, and we must do what is put into our hands. We must know how to meet those duties. If we can have the ability to do the work of the household well and quickly, and then have time to do the work of society and the church and the schools, no one will say that woman has not been equal to the demands made upon her.

Long ago a man said to his daughter one tongue is enough for a woman. And today we sometimes feel the schools have put more strength upon the other tongues than they have upon teaching girls to use their hands. But the time has come when Ruskin's words are apt "there can be no happy thought without labor and no healthy labor without thought." So God has put into our lives the ability to teach our girls to use their hands in such a way and for such purposes that good results will follow. No girl can know too much about the tasks of every day home making.

Training for home-makers means all that a woman wants. Home-making may come from every direction. I do not know of anything that is not useful in a home. I don't know of any kind of work or thought that does not become useful somewhere among the people and to the little ones. If any of you have listened to the questions that the little folks ask about the buds and flowers and trees and rocks and fences and insects and birds and cattle, you will readily say there is no sort of training that comes amiss.

When we talk about this matter of domestic economy we find the girls must have it. The sentiment is here to stay. We must train our girls to become the strongest and best women in the world. You girls are ready to stand up and take that training. People have said sometimes that the training of woman was lost because she married and went into a home. Pretty soon your farmer boys will need the best wives that can possibly be given them. And in order to keep these broad acres on Illinois prairies in the front rank they must have the best kind of men and the best kind of women to look after them. (Applause.)

When a woman knows all of these various things she is the better equipped to make a wise, strong mother. This training must come in her younger years, when she is getting her education, because no girl can stop after she is twenty-one to twenty-four years old. Somebody is waiting with an open door for her to step in. No girl can stop two or three years then to go to school and find out these things, and she goes to her work only half trained unless she has received it during her school days.

So I say to you here, today, I am glad to be with you and tell you what I have tried to do in domestic economy. Give it to your girls, and whatever measure you give your girls they will give you back ten-fold. (Applause.)

There are many men, I doubt not, in this house who shouldered their musket and marched off in defense of the old flag, and if they had not done this for the flag thirty years ago there would not have been much of it left today. There is another kind of conflict upon us and we must make our plans carefully. The food we put into the mouths of our people makes our nation. The strength of our own food gives to our people what greatness we have. And the quarreling dyspeptic, who snarls over his childrens' heads whenever they come near him, can attribute his condition to the food that has been given him.

There is no question that many of the crimes today are committed because bodily cravings induced by ill-nourished bodies. These to a great extent might be subdued by the right kind of food.

If we could put proper food into everybody we would have less people in our penitentiaries, and less unfortunates in our insane asylums, because the body would be so nourished that the mind would be properly balanced.

We have been told that the hand that rocks the cradle is the hand that rules the world. But I say unto you that the hand that wields the cooking spoon is the hand that rules the world. (Applause.) In this day and age we must see to it that the cooking spoon is well wielded. Domestic economy means to your girl's ability to make better homes, to give to the State more power over the enemies of mankind. Can there be any question about the necessity for training them? Can there be any question that our girls must stand first? No state in this union should stand ahead of Illinois. And so I think there can be no doubt as to what you will do, for I am sure this great State will not neglect its duty in the direction of domestic economy. (Applause.)

On motion a rising vote of thanks and three cheers were given Mrs. Kedzie for her very able address and to Mrs. H. M. Dunlap for her valuable paper on "The Housekeepers Club."

Mrs. Cariel:—I wish every member here would bear in mind we have gone ahead in this work. And the next time Mrs. Kedzie addresses an audience of this kind I hope she may well refer with pride to a well constructed building for domestic science on these grounds. Illinois must not be behind other states. It depends upon you to use your influence upon the Legislature to get an appropriation for this building. It is needed as you all can see. Do not forget this when you return to your homes. It is in your power to give it to us.

We will now have a paper by Mrs. Chapman whom we will have the honor of listening to this morning.

Mrs. L. G. Chapman, of Freedom, Illinois, said:

I feel my paper is entirely surperfluous, for Mrs. Dunlap and Mrs. Kedzie have expressed my ideas in so much better language than I can express here, I feel that you could well do without my paper.

Voices: "Go on."

Thereupon Mrs. Chapman read the following paper on the subject "Farmers' Girls," viz:

OUR FARMERS' GIRLS.

Reams of paper and bottles of ink have been consumed, the midnight oil has been burned in vain, while great minds have battled with the abstruse problem that still confronts the American farmer, how to keep the boys on the farm. Perhaps no question pertaining to the farm is as difficult of solution, for after all this time and brain tissue have been expended upon it, a large per

cent of the farm boys are constantly gravitating toward our great business centers. American history proves this, for all along the pathway of the century behind us, in our cemeteries, public squares and city parks are the bronze and granite monuments erected to the memory of heroes, statesmen, authors, poets, and musicians, who were born in rural homes. It is the wonder of the age, that farms, with a surface so rugged and soil so thin that common vegetation almost starves to death, will grow men, whose brilliancy of intellect flashes like a meteor across the sky, leaving in its wake a long train of brightness, connecting century with century. These farm boys breathed in with the century atmosphere aspirations to make for themselves names that could live in history. To achieve these, they must have a higher education than can be acquired in the country schools, they go to the city schools and from there to college. The pure country air, sweet sleep, healthful food and needful exercise of their boyhood days have hardened their muscles, strengthened their minds and expanded their brain power and they easily outstrip their companions who

MRS. L. G. CHAPMAN.

have been reared in the lap of luxury. There is a new inspiration to them in life, the goal that is worth achieving is in sight. Can one blame a boy if the ladder of fame seems far more alluring and less toilsome to climb than the ladder he has left behind him in the old farm barn? Certainly not. No special effort should be made to keep a boy on the farm, if he has a particular talent in another direction. You may be cheating the world of one of its brightest lights, its greatest intellects, and giving it in return but an indifferent farmer, for one must have a love for his vocation, and a pride in it, to make it a success. A course at an agricultural college would do much toward cultivating a love for the farm. To the boy educated in the science of agriculture, farm work is not drudgery. Nature is to him an open book and its pages an interesting study. But it is not of boys that we are here to speak. What about our farmers' girls? One might think because there is so little said and written in regard to girls being kept on the farm that they were void of aspirations, and were content in whatever niche nature had placed them. Is this true? Well, hardly. American girls are more or less affected with that same restless spirit that has made their brothers the wonder of the world. It is true that under the laws of this country, girls can not climb to the topmost rung of the ladder of fame in the political arena, and they have one less incentive for going out into the world. The fields of literature, art, and music are as free to them as to the boys. As poets, artists, musicians, lawyers, ministers and doctors, the world is ready to receive them if they are able to climb to the same heights that the men have achieved. There is nothing so dear to the human heart as fame; and there lies the fame that is worth achieving. Money will buy a seat in congressional halls, and the road to the highest office in the land may be paved with bricks of silver and gold, but the millionaire's millions will not buy one grain of brain power, one pin's worth of natural talent. This is God-given and accordingly priceless. As it is with boys so it is with girls. If they have a particular talent it should be cultivated, even if it takes them from their country homes. The world has a right to all the natural talent implanted in the human brain. Some of the brightest lights in music, literature and art, among women, were once poor farm girls. But it is not

these, the talented few of the farmer girls, that we have in mind. They will take care of themselves. "Mute inglorious Miltons" lived and died a century ago, but with our present system of education neither boy or girl need hide their talent in a napkin for lack of opportunities of cultivating it. No, it is not to the few but it is to the many farmers' girls that fill and brighten our homes that we would give a word of cheer and hint of advice. What shall we do with them? First we must educate them in the public schools surely and in the high school and college when possible. The custom of educating the boys in a family and not the girls, prevailed to some extent in the past, but it is an evidence of short-sighted wisdom, beginning, as it were, at the wrong end of the problem in trying to solve it.

Money invested in the education of girls is not only profitably, but patriotically invested. You may ask why? The girls of today are the women of tomorrow and the mothers of the future generation. Good government depends upon the intelligence of its lawmakers. Children inherit more from the mother than from the father. They imbibe more from close communion with her and receive impressions from her example and teaching when the mind is plastic and impressions made are lasting. She is the first teacher, and it is necessary that she should be educated and capable of being a correct teacher. As it is not possible for all farmers to educate their girls in the high school and college, and is possible and compulsory to send them to the public schools, it is a duty they owe to their class to make the public schools of the best. There is no reason why the public schools in the country should not equal the grammar schools of the cities, both in teachers and school-room furnishings. Skilled labor is not cheap in price, but is cheap measured by results. Farmers' girls should have all opportunities possible for obtaining an education. The majority of them are only educated in the public schools, but there are many opportunities outside the school-room that can be grasped. The district library and reading circles, the Chautauqua circle and University extension, through which a college education is brought right to the home; the grange, that great educator of the farmers and their families, and the numerous cheap books of standard authors that are in reach of every one. Music and art should be added to a girl's education if it is desired and a talent for either is natural, but we would not waste money trying to cultivate a talent nature has denied them. Girls should learn the rudiments of practical business by experience on the farm as well as boys. They should learn how to earn, save and spend money. The economical administration of the household expenses is the base upon which the whole structure of a comfortable home rests. It is a common practice on the farm to give a boy a colt, pig or some kind of stock to raise, that when sold will bring money that will be his to do with as he will. Why should not girls share alike in this coöperative plan of farming and gain the same useful knowledge by object lessons? Give a girl something for which she can realize a sum of money that will be her own. Poultry, butter, eggs, fruit or something that has a money value on it. No one knows the real value of money until they have earned it and no one realizes the cost of an article until it is paid for from their own earnings. Every girl should be prepared to earn a living for herself if fate so wills that she is thrown upon her own resources. There are strange turns in fortune's wheel, for she is at best a fickle goddess, and no girl should be left alone in the world with only an expected inheritance to stand between her and poverty. Every girl should learn to do something that the world needs and must have, and to do it well. If it becomes necessary for her to come in competition in the race for bread and butter with men, she should claim the right to the place because her work is done better than a man would do it, and not cheaper, thereby raising the standard of work but not lowering wages.

Self-reliance and independence should be among the first lessons instilled into the minds and implanted in the hearts of our girls. Margaret Fuller said: "No girl can give her hand in dignity until she has learned to stand alone." If every girl standing on the threshold of matrimony could realize the responsibility that she takes with her marriage vows, would not many of them turn backward? The responsibility of the patriotism and loyalty of American citizenship rests in a measure upon the mothers of this republic. Children should breathe in with their first breath a loyalty to and a love for their home. Seeds of patriotism are thus sown in their young hearts that will develop into a love

for their country. The child's first conception of law and government is received from the mother. As mothers, then, we must be true to our homes, our children, our country and our God. The simple little commands that we give to our babies may seem of slight importance at the time, whether they are obeyed or not. Just there government begins—each home should be in itself a limited republic, where the laws are justly but not arbitrarily enforced, and the business and management of this small government should be discussed in the presence of its cabinet officers. Alas, too many homes are monarchies of the severest type and the head rulers are veritable despots. And yet we wonder how the seeds of anarchy can find a soil in which to germinate in an American heart.

Arbitrary laws rigidly enforced stir up rebellion, and the child that rebels against the home laws will develop into the man who rebels against the laws of the country. On the other hand, a laxity in the home laws and a neglect to enforce them will create in the child a disposition to regard all laws lightly. Mothers, wives, sisters and daughters, what a responsibility nature has imposed upon us and what a charge she has entrusted us with, the molding of the characters of the men and women of this nation. Need we not the wisdom of Solomon to guide us carefully through the mazy labyrinths that fate has cast around us?

And how shall we gain this much needed wisdom if not by educating our girls. Some one has said that to educate a child you must begin with the grandmother, but if that opportunity has slipped beyond the grasp of the present generation we must do the best we can with our own girls for the sake of future generations. Home management is an important feature of a girl's education. Few people realize that it requires the executive ability of a great generation to manage a home properly. Some women are housekeepers but not homemakers. A girl should learn to combine the two if she fulfills the destiny for which woman was created, when God said it is not good for man to be alone. With the first woman came the first home. Under the bright blue canopy of the new heaven and upon the green velvety carpet of mother earth the first home was founded. It was the home of a farmer, for agriculture was the first industry established. There is no word in written language around which clusters such tender memories as the word home. Home is the best place for farmers' girls, unless especially fitted for some particular line of work, but they can not always see it. Household duties are monotonous and to their young eyes farm life looks dull and colorless. J. G. Whittier, in that beautiful poem that alone would have made him famous, understood this phase of girlhood when he described his heroine, Maud Muller, as being—

“ Merrily singing as she raked the hay—
Until she glanced to the far off town—
Then the sweet song died, and a vague unrest
And a nameless longing filled her breast,
A wish that she hardly dared to own,
For something better than she had known. ”

We doubt if there is a farmer's girl that has not at some time in her young life felt a longing for something better than she had known, and she as surely as Maud Muller did, thinks that it is to be found in the “far off town.” Life in the city, to the country girl, seems one continual round of pleasure. Even the daily occupation of the working girl in the city, where so many work together, and new people are constantly coming and going, is less monotonous in their eyes than working in the country. Are these city girls as care free as the country girls? In the first place they work under an employer who has bought their time and has a right to every moment of it during work hours, and not only their time but their dispositions, their appearance and their courteousness. You may smile at the thought but how long will an employé in any establishment retain her position if she is careless in appearance, discourteous in manner or wasteful of time. No business will thrive unless the employés coöperate with the management. The country girl at home works under the instructions and to assist her best friend on earth, her mother. The work is done to make home pleasant for her father and brothers and sisters. Could one have a grander motive for work or a greater inspiration for success? If work in the farm home is

systematically managed there is time for visiting, for music, reading, fancy work or whatever a girl may desire in the way of recreation or amusement. Horses and buggies are to be found on every farm, rides and drives in the afternoon or evening are always available. There is a freedom and independence in country life that can not be found in the city. Fashions chains are far less binding and society lines are not so closely drawn. The farmer's daughter, if she lives up to the best there is in her, is the peer of all her associates. No matter if she is less wealthy than her companions, if she has made use of her opportunities for study and culture and is observant of the little courtesies of life and careful of her associates, she is recognized in the best society the country affords. A country girl in her home is a princess, but when she goes into the city to earn her living she must expect to be a servant; not but what it is honorable for a girl to go into a shop or store to earn her living if necessary, all honest labor is honorable.

Ella Wheeler Wilcox touched a key note when she said:

"The wage earning women who talk of their sphere,
Have thrown the domestic machine out of gear,
They point to their fast swelling ranks overjoyed,
Forgetting the army of men unemployed.
'The world needs wise mothers,
The world needs good wives,
The world needs good homes,
And yet woman strives
'To be everything else but domestic."

We recognize the natural right of country girls to compete with others in the race for bread and butter, but we would say to them stay on the farm and not leave the country for the town, expecting to find something better than you have known.

Life is largely what we make it and happiness is mostly within ourselves, and the art of housekeeping and homemaking is one of the most important things a girl can learn. This can be learned to best advantage in the country, where the home management is under the direct supervision of the wife and mother and people live nearer to nature's heart. There is a growing tendency among women today to go out in the world to do something grand and leave their families for servants to care for and their children for nurses to train. The evils of this course may not be apparent at present, but if followed from generation to generation it would result in a race of people weak in body as well as mind. Children left to the care of nurses are not as carefully trained in mind or as suitably nourished in body as if they were under the supervision of the mother. Cooks who have no scientific knowledge of their art, or no interest in the appetites for which they cater, are not liable to prepare the most wholesome and nutritious food, while the busy mistresses of these homes have no time for home duties. They are attempting to revolutionize the world, while forgetting the command to build the wall next ones' own door. The constitutions of the present generation do not compare favorably with those of their ancestors. Prenatal influences and a disregard of hygienic knowledge are largely responsible for these conditions. Many of us remember our grandmothers or great grandmothers and with what satisfaction they recounted for our benefit the hard work they did in their time—raising a family of a dozen children and doing the spinning, weaving, sewing, knitting, darning, mending, besides making butter, cheese, applebutter, soft soap and candles, with the general housework. They never catered to capricious appetites. No, indeed, they and their families ate heartily three times a day of pork, hominy, cornbread, mince pies and doughnuts. Poor dears, much as we admire their industry and revere their memory, we can not help wondering, with the light of the scientific investigations of the last years of the 19th century to aid us, if our constitutions would not have been stronger if they had taken more time for rest. Perhaps our digestion would have been better if theirs had not been so heavily taxed. Rest their dear souls! They were not to blame for entailing these conditions. They had been taught that to rest in the daytime was a sure sign of laziness. They had never heard of domestic science or balanced food rations, consequently ate what their appetites craved after such vigorous exercise and drank from a gourd dipper and the old oaken bucket, uncon-

scious of the invisible imps that science would hatch out of the clearest water to plague their posterity. Their minds were never disturbed with visions of bacillis, bacteria, microbes or germs. But need we, with more light and greater advantages of education, keep ever in the groove that they honestly, if ignorantly, made? One can not be blamed for being born in darkness, but would be blamable for not searching out the light.

There is no subject before the American people today of greater importance than the subject of domestic science and pure foods. It is the most essential science in the whole college curriculum, for largely upon the quality and preparation of the food we eat hinges the health and happiness of the nation. Farmers' girls, if they would keep in touch with this progressive age, must study this science that is of most benefit to them as housekeepers and homemakers, for the bone, the sinew and much of the brain force of the nation is made in the farm homes. To understand the art of supplying vitality to the body and power to the brain through a knowledge of the chemical and nutritive properties of foods should satisfy the highest ambition. To make healthful bodies, contented minds and happy homes lies in the power of our farmers' girls. To be a companion, friend and helper to mother, smooth the rugged pathway of life for father, care for the little brothers and sisters in the home, and be their guide and counselor, and to scatter smiles and sunshine all around the pathway of those nearest and dearest to her, is the grandest mission a girl can have. Girls, do you realize that there is a heritage for you, of which no man can rob you? for it comes only to woman. It is the heritage of motherhood. An American woman should be the happiest woman in the world. Although an uncrowned queen, yet she may be the mother of an American king. Farmers' girls, American crowns descend not down the glittering lines of royalty, for under our republican form of government the poorest mother in the land may rock today in the rudest of cradles the future president of the United States.

At the conclusion of the reading of the paper by Mrs. Chapman a rising vote of thanks was tendered her for her very instructive and interesting production.

Mrs. Carriel:—It is a pleasure to introduce Hon. Geo. H. Gordon, of Paris, Illinois, who will favor us with a paper on the "Thinking Farmer."

Mr. Gordon read the following paper:

Whilst we are here to solve problems in horticulture and in agriculture, to look after the dairy interests, the cattle interests, the swine interests, the sheep interests, the poultry interests and other interests, let us not forget that the problem of developing good schools in every local school district is one of the first questions before American farmers and the American public. This is an age of specialists, but there is a general education that must be mastered before a specialty in any line is taken up. I know there is a sentiment among a large class of educators that all school work should have in mind the future occupation of the pupil, and that early in the school boy's career he should select his vocation in life and at once begin to prepare for it.

Now, if this is true the caste system of India is the correct theory to adopt, as it is settled there that a boy is to be a carpenter, a blacksmith or a priest—in fact this is determined when he is born. He has no trouble in deciding what he shall do in life, as fate and custom have already decided for him. In our country we find it is the rare boy that has such marked tastes that he is fitted for only some specific life work. It is the few that can not adjust themselves equally well to a number of employments and be successful in whatever occupation they may see fit to choose. I believe it to be true that teacher or even the parent can not afford to have the future occupation of the child in mind when they are conducting his training at home and at school.

He is to fit his pupils for life, but he must give them the training in mind and heart that will enable them to take up life's work with the assurance that they can be useful to society in many specific ways and not feel that there is some one thing alone that they must do.

Success can be won almost anywhere; what is necessary is a trained mind that can investigate the problems that come up in life. Training, strength and power are wanted and a good general education without thought of occupation is the best and most effective preparation for life's duties and opportunities. I would take issue with those who would have such an education in the country schools as would settle all the farmers' boys on farms forever and that would make them satisfied with the outlook and opportunities of the farm. At the farmer's home are born children who make scholars, professional men, editors, merchants and managers of all kinds, as well as good farmers. Yes, there have been boys who have grown up on the farm who have been chosen governors and congressmen, who have made authors, who have made commanders of armies, who have been leaders in manufacturing and have been factors in some of the greatest events in our history. The teacher that has charge of the humblest school may by duty well done set force in motion in some life that will break its environment and go into a higher sphere of action, bringing honor to himself and renown to his state and nation—story of Charley Hite.

Then it is the duty of the teacher, the province of the school, to give the pupil a chance to develop his powers, to test his strength, to put his faculties in training, to inspire him with lofty notions of life, and with this general fund of knowledge already acquired let the pupil himself choose that pursuit which is most suitable to his acquirements and tastes. Now where shall the farmer give his children this general education? Shall he leave his beautiful home and happy influences and move to the town or city? Or shall he rather remain on the farm and bring the school near him?

Life in the country must be made attractive if you wish enterprising sons and aspiring daughters to stay there. Good roads, good markets, home decorations, good clothing, good entertainments, good preaching and good schools are all necessary to keep the boys and girls on the farm. There can be no mistake that many farmers err in removing to the town or city to educate their children. The town schools may be better, but if they are they have been made so by a conscientious, non-political school board whose aim has been to secure efficient, diligent and painstaking teachers, and keep them when they get them. The farmer seems ready to support the town school but forgets to build up and support his school at home. And now let me say in all candor that there is no better school in our land today than the country school with proper building and appliances and furnished with an efficient teacher. I speak of the possibilities of the country school and not what it is now. And the fact remains that there must be good school privileges for the country children or our country is doomed to meet worse conditions than have ever threatened her. There is no problem for the statesman more serious than that of the future of the country school.

Let me quote you some new experiments:

"California has solved the financial problem. All teachers are paid from the state treasury. Teachers have the same pay for the same sized school in city and country, and the minimum price paid a teacher is more than is paid almost any rural teacher in the east. But prejudices are so great in the east that there is no hope of such generous state support. Pennsylvania appropriates \$5,000,000 from the state treasury for teachers' salaries, but under such vicious conditions that the schools rarely gain anything. It merely lightens local taxes. Massachusetts makes an appropriation to help towns secure rural supervision on condition that extra appropriation is made for the raising of teachers' salaries. Next to the California plan that of Massachusetts secures best results. The state only helps communities that first help themselves.

"Ohio has found some relief in the Boxwell law, which provides for a county examination of all pupils from rural schools, and if they pass it satisfactorily, they may have a township graduation, with all the commencement day effect, and all the Boxwell law graduates must appear at the county seat upon a given day and receive a diploma under the inspiration of a formal address. In Butler county, for illustration, there were this year—the fourth year, I think—141 applicants for the examination, of whom eighty-three passed. Upon August

29 these appeared in their best holiday attire and took their diplomas. The effect of this is good. The diploma merely says that they are entitled without further examination to enter any high school in the state.

"But even then there are limitations which can not be overcome, so far as can be seen, through the centralizing of the schools by means of transportation. In practice this is a success, and no serious obstacles have as yet appeared. It reduces expenses, wipes out tardiness, largely eliminates avoidable absences, and provides as good schools as can be found in any city. A contract is made with some resident of the district, who provides a comfortable conveyance, which can be made rain-proof upon occasion, with a responsible driver. The carriage starts from the farther end of the district, drives along the main road and off upon all important branch roads, takes up the children practically from their own door, delivers them in good season at the school house, and at the close of school takes them safely and comfortably home. They avoid serious exposure in bad weather. They are in a good school house, with as good teaching, as good appointments and appliances as in any city. There is good grading, and all for less expense to the town than was required for the maintenance of the poorest kind of a school in the backwoods. The only hindrance to this solution of the rural school problem is the "cussed" prejudice of so many communities which have local "orators," whose only stock in trade is the ability to stir up opposition to any idea that comes from the "citified fellows" at the "centre." The way is now clear, but the difficulty is to get people to walk therein."

In our county we are building modern school houses. At six years of age we start a boy for U. of I.—some fall by the way.

Recess until 1:30 p. m.

THURSDAY, FEBRUARY 24, 1898, 1:30 P. M.

AFTERNOON SESSION.

The Institute met at 1:30 p. m., pursuant to adjournment, President Moore in the chair.

The absence of Gov. Tanner, who was to preside, was generally regretted.

The following information will explain the unavoidable absence of Governor Tanner:

STATE OF ILLINOIS, EXECUTIVE OFFICE,
SPRINGFIELD, February 23, 1898.

Colonel Charles F. Mills, Champaign, Illinois.

MY DEAR COLONEL:—It is with great regret that I am compelled at the last moment before I should take the train for Champaign, to give up my intention of attending the annual meeting of the Illinois Farmers' Institute.

You will please present my sincere regrets to my many friends in attendance and explain my unavoidable absence. I am firmly of the opinion that I can render the farmers of the State no better service than to remain at my post of duty in these closing hours of the session of the General Assembly, and aid the friends of revenue reform in the passage of much needed legislation, that will make all property pay its just proportion of taxes with the land owners. Enclosed you will find some remarks that I should have made at the meeting had it been possible for me to attend and enjoy the same.

It is my great desire to assist in every possible way in promoting agricultural education in this State, and I know of no better agency than that provided by the General Assembly in the act creating the Illinois Farmers' Institute.

GOVERNOR JOHN R. TANNER.

You need no assurance of my growing interest in the efforts that are being put forth by the Farmers' Institute workers in each county in the State to add to the intelligence and prosperity of the tillers of the soil.

Yours very truly,

JOHN R. TANNER.

The introductory remarks prepared by Governor Tanner for the opening of said session of the State Farmers' Institute, and referred to in the above letter, are as follows:

GOVERNOR TANNER'S ADDRESS.

Mr. President, Ladies and Gentlemen:—It was my privilege at your last annual meeting to welcome the Illinois Farmers' Institute to the capital of the State. The honor that you conferred upon me, as the chief executive officer of the imperial agricultural State, at your meeting, was duly appreciated. It is now equally as great a pleasure to respond to the invitation of the farmers of Illinois, and I cheerfully discharge the duty you have imposed upon me of presiding at this session of your annual meeting. The high character of the entertainment you have provided for this, your third annual meeting, can not be too highly commended and the papers and discussions will be read with much profit by the farmers of this State. In the very complete and creditable programme prepared for this meeting, you have fully covered the various fields of rural husbandry.

In my last address before the Illinois Farmers' Institute, I said of this board, "You have laid a broad and deep foundation on which to build up an organization that may render important service in the future development of the vast agricultural resources of the State."

It has afforded me satisfaction during the past year to note the rapid growth of the Farmers' Institute work in the county and State organizations, and the good results that have thus far been achieved confirm the wisdom of the General Assembly in the passage of the act creating this body.

The last General Assembly manifested its increased confidence in the usefulness of your organization, by making an appropriation to aid in defraying expenses heretofore borne by the enterprising and public spirited promoters of the Farmers' Institute work of this State.

It is my good fortune to sign the first act of the General Assembly making an appropriation for the Farmers' Institute work in Illinois, and in after years, when this new enterprise becomes the great agency, as it will under wise and patriotic direction, for stimulating thought and action in the line of advancement in all that pertains to improvement on the farm and in the home of the intelligent, thrifty and contented farmer, I shall recall with pride the assistance that it has been my privilege to render a very worthy public enterprise.

A hasty examination of our second annual report, and a comparison of the same with the very creditable preceding report, shows that my prediction of the growth and usefulness of the Illinois Farmers' Institute has been more than realized.

It is a pleasure to note in your programme that since your last annual meeting, in my home county of Clay, where my farm is located, has been organized and is now enjoying the benefits of Farmers' Institute meetings. The extension of the work in southern Illinois has been rapid, and, with one exception, the farmers of all the counties in my congressional district now enjoy the benefits of County Farmers' Institutes.

I have heard it said in some organizations the man most likely to take up more than his share of the time in talking is called to the chair, but you will pardon me for taking up a few moments of your time in thanking my esteemed friends, Governor Mounts, of Indiana, and Governor Luce, of Michigan, for the honor conferred upon the Illinois Farmers' Institute by their presence on this occasion and for what they may say for our encouragement as farmers. In this connection, I desire to thank Hon. George McKerrow and

Prof. Latta, who have done such excellent service in directing the Farmers' Institute work in Indiana and Wisconsin, of the pleasure it gives us to have the benefit of their experience in a line of effort that is comparatively new in Illinois, at least under the State supervision.

The farmers' wives and daughters of Illinois are to be congratulated on the prominent recognition you have given them in the session set apart for the discussion by ladies of topics in which they are especially interested. In the absence from this meeting of the great promoter of agricultural and industrial education, not only in Illinois, but wherever the influence of our agricultural colleges has extended, you have fittingly selected Mrs. Mary Turner Carriel, the daughter of the highly honored Prof. J. B. Turner, of Jacksonville, to preside at the ladies' session of this Institute. Could there be any more conclusive evidence of the desire of our people to give due recognition to women than in the selection of Mrs. Carriel as a member of the Board of Trustees of the University of Illinois, and that other eminent ladies have been given an opportunity to present to the best advantage the home and domestic side of farm life?

The farmers of the State will be especially pleased to find on your programme sessions devoted to papers prepared by students attending the State Agricultural College, as well as addresses by the professors of this department of the University of Illinois. The attendance at the School of Agriculture of the sons of farmers of this State would be multiplied many times could they have been present at this meeting and listened to the interesting and practical papers prepared by these professors and students.

It was my intention to take as a text for the hastily considered remarks presented, the statement of Daniel Webster, which reads as follows: "Whatever else may tend to enrich and beautify society, that which feeds and clothes comfortably the great mass of mankind, should always be regarded at the great foundation of national prosperity."

The full discharge of the duties imposed on this organization by law, will, in a great measure, meet the conditions outlined in the text quoted by enriching our farmers, adding to the beauty of society composing our rural population and making it possible for the producing classes in the State to do more to feed and clothe comfortably the great masses.

In closing, I desire to call your attention to the importance of prominently displaying on your banner the first sentence in the act creating this important auxiliary to the educational agencies of the State, which specifies that your mission is "to assist and encourage useful education among farmers and for developing the agricultural resources of the State."

President Moore: It gives me great pleasure to introduce Hon. J. A. Mount, Governor of Indiana, who will favor the audience with an address on the "Economics in Agriculture." Gov. Mount is a practical and successful farmer and has been engaged in agricultural pursuits all his life.

Governor Mount addressed the convention as follows:

ECONOMICS IN AGRICULTURE.

A farmer, upon being told that I was to discuss Economics at the Illinois State Farm Institute, replied: "What has economics to do with farming?" Another farmer said they did not grow that crop in Illinois, the main crop being corn.

An old farmer in Montgomery county, "Uncle" David Enoch, as he was familiarly called, was asked to talk in a Farm Institute in that county. He said: "When I purchased my first farm in this county my neighbors twitted me for having bought what they denominated the 'poor farm.'" "It was true," said he, "that the farm had been poorly managed, and the soil had become impoverished, but I contrived to make enough money from this 'poor farm' to pay for 600 acres of much richer land in this county and at the same

time greatly improve the poor farm." Continuing, he said: "I grow clover abundantly, at all times keeping a large part of my farm in grass, thus enabling me to engage in growing live stock sufficient to consume the products of my farm, and in addition a large amount of the crops grown by my neighbors who are so unwise as to prefer marketing the products of their farms on the wagon instead of in the fleece and on the hoof. I get profit in two ways when I feed stock: the profit on my stock and the enrichment of my farm. I grow clover for the same reason. I get the crop and at the same time improve my soil."

The old gentleman said that chemists and college professors tell us that clover gets ammonia or nitrogen from the air, thereby adding fertility to the soil. "I would not recognize what these gentlemen call ammonia and nitrogen if I was to meet them in the road, but I do know that I have made money farming and my farm has become richer at the same time." I have quoted liberally from the speech of this honored and successful farmer, because I regard it as one of the best on farm economics I have ever heard.

It was my privilege to hear a successful German farmer of Spencer county, Indiana, discuss the question, "How to Reclaim the Wornout Clay Hills" of that county. In his discussion he reasoned from the causes that had impoverished the soil. He said a farmer of that county came to him for advice as to which method would be cheaper—to pull down his log stable and rebuild on a clean spot, or to clean out the same. This farmer had not, in many years, cleaned his stable, and could no longer cut out logs above the door to afford a means of ingress and egress for his horses. The speaker said that he offered, if agreeable, to clean out the stable and remove the refuse to his own farm. The offer was accepted cheerfully, and I need not say who profited the more by the bargain. This story illustrates very clearly the wise and unwise methods, thrift and thriftlessness. It is estimated that the manure of domestic animals in New York State is annually worth one hundred million dollars, and that one-half of this is lost every year by reason of neglect and bad management. Indiana and Illinois have more live stock than New York and the methods of caring for animal manure in these states are still more prodigal. In order to convince yourselves of the truth of this statement you have only to travel over any of our great grain-growing and stock-feeding states. Crops of corn are fed on hillsides, along creeks and branches and on waste lots, where all the plant food taken from the soil in the growth of these crops is lost. You will also see heaps of manure around barns being fire-fanged and thus destroyed, and also leaching out and washing away. This reckless waste will, in the process of time, in reduced crops emphasize the lack of applying the principles of economics to farming. The east has its abandoned farms even now. An able New York committee in its report tells of impoverished soil and idle farms in that state. Abandoned land may also be found in the richer middle states. Hundreds of thousands of acres are found in the southern states, abandoned to the growth of sedge, sassafras, pine brush and blackberries.

SCIENTIFIC MAN SOUND A NOTE OF WARNING.

Prof. Huston, State Chemist of Indiana, estimated the commercial value of nitrogen, phosphoric acid and potash in a bushel of wheat at a fraction over 26 cents and in a bushel of corn at 20 cents. In 1897 we exported from the United States 189,000,000 bushels of corn, the value of plant food in which was \$37,800,000, and of wheat 150,000,000, containing plant food worth \$39,000,000.

In the shipping of these two cereals we have lost in three elements of plant food, at their value in the market, the enormous sum of \$76,000,000.

The same eminent chemist says, in the Indiana Agricultural Reports for 1893, at page 185, that five of the leading crops in Indiana, viz., corn, wheat, oats, timothy and clover, take from the soil phosphoric acid, potash and nitrogen worth \$104,803,700, and that the cornstalks and wheat straws of an average crop remove \$28,000,000 worth.

HON. JAMES A. MOUNT.

Thus it will be seen that in the growing of these five crops there is taken from the soil every year a quantity of plant food valued at \$192,603,700. To be forewarned is to be forearmed.

PROFITS MEASURED BY YIELD.

The fertility of the soil in a large measure determines the yield of crop. The largest crop must be grown to insure the greatest profits. The cost of producing 60 bushels of corn on rich soil is no more than the production of 20 bushels on poor soil. There is no profit in 10 bushels of wheat per acre, but there is a good profit in 30 bushels. This will suffice to emphasize the wise economy of constant care to enrich rather than impoverish the soil.

PROFITS MAY BE FURTHER AUGMENTED BY USE OF CROP.

Two farmers this year may grow on adjacent farms 50 bushels of corn to the acre. One farmer gathers the corn and hauls it to market. Having but few farm animals, he does not save the fodder. In the spring the stalks are broken down and burned. When this farmer balances his books, if he fails to note the loss to his farm in plant food thus destroyed and pursues this reckless method, he will find at last, in the failing crops, that "farming don't pay." The fault, however, is not in the farm, but in the farmer. His neighbor, on the other hand, utilizes the entire crop. He understands the science of feeding, he has watched the trend of the markets, is a judge of live stock, and is prepared to feed his stock in the manner to obtain the best results and to the kind of stock will command the best prices. He will also display sound judgment in feeding the soil while he is fattening his stock. His methods makes it possible for him to realize three times as much from his crop as the man who hauled it to market. The growing of corn and transporting it to market require brawn. The growing and feeding of live stock, accompanied by a study of markets, require brains. By the latter method factors that make for success are multiplied and possibilities for larger gain are augmented. Work is necessary upon the farm, but the farmer who depends upon work alone will find farm life more than drudgery. More wise planning and skilful execution are needed.

Of the 80,000,000 acres of corn grown in 1897, 50,000,000 acres of the by-product or fodder were in a measure lost. If this waste had been properly cared for, its value as food for farm animals would have amounted to multiplied millions of dollars.

UNTHRIFTY METHODS.

The utter disregard of economic principles is alarmingly manifest in the methods of the average farmer. The wasteful modes of harvesting the corn crop, if pursued in any other business, would result in bankruptcy.

Our farmers could learn many valuable lessons and carry home with them many helpful ideas if they would take a trip through one of the large establishments in any of our great cities where animals are slaughtered and the carcasses transformed into products for the markets. It is a common saying about the pork-packing establishments that every part of a hog is utilized except his squeal. In the factories that supply dressed beef the same economy prevails. I here quote from the Ladies' Home Journal:

"The hide goes to the tanner, the hair and blood are utilized, the horns and hoofs are transformed into combs and buttons, the thigh-bones (worth \$80 per ton) are cut into handles for clothes brushes, the fore-leg bones sell for \$30 per ton for collar buttons and parasol handles, the water in which the bones are boiled is rendered into glue, and the dust from sawing the bones is food for poultry."

In all these places the most careful business methods are rigidly exercised.

Not long ago a closely observing man, who had traveled extensively in Indiana, said the waste on the farms in that state exceeded the net profits,

Recently, at one of the farm institutes in our state, a gentleman who last fall traveled in Europe, made the statement that the waste of Indiana farmers would keep the farmers in France.

As a result of my own travels through Indiana I have become convinced that one million sheep could be kept during the summer months on the pastures and fields, utilizing what would otherwise be wasted and much of which, in the shape of weeds and brush, is positively hurtful to the farms. I am unable to manage my farm and obtain the largest returns without sheep.

It is no uncommon thing in going about over the country to find valuable farm machinery exposed to the weather. I once had a neighbor of whom it was said that he was never troubled to take his reaper out of the barn or shed. "All that he had to do was to cut the weeds from around it and hitch on." The rust and rot of winter do more for the implement dealer than all the wear and tear of the summer.

A few years ago I addressed a farm institute on "The possibilities of better profits in farming." To this address an old farmer responded with much zeal. He said there were no longer any profits in farming. He said the farms were mortgaged for near their value; the mortgage notes bearing 8 per cent interest, while the farmers could not make to exceed 2 per cent on the value of their farms. It is only a question of time, he said, when the money lender, the trusts, the combines and the monopolies would dispossess the farmer. We are only hewers of wood and drawers of water for the monopolies of this country.

In brief reply, I asked this farmer if he carried this tale of woe into his home. If he thought that such a picture of farm life would be inspiring to his boys? I said to him frankly, if he could see nothing more hopeful than he had portrayed he should cease to dishonor the noble vocation.

A young man came to me and thanked me for the reply I had made, saying that he boarded at that farmer's house, keeping his horse there while he taught the winter school. He further said he got lumber and nails and enclosed a place where he could keep his horse from being molested by other stock. There was not a stable or barn door on hinges; stock went at will through the barn; farm implements unsheltered, stock running over and damaging the same. Everything, he said, showed signs of neglect, unthrift and waste at home, while the farmer was in town abusing laws and lawmakers, banks and capitalists, forgetting that his greatest enemy was his own unthrifty methods.

ECONOMY OF GOOD ROADS.

One of the greatest blessings to farm life is good thoroughfares. There is no burden more galling to the farmer's family than the thralldom of mud roads. Intellectual progress is trammelled, social development dwarfed and financial success retarded by bad roads. The farmer who sees teams plodding their weary way by his farm through the mud himself partakes of the surroundings, steps sluggish, thinks slowly; loses pride and becomes non-progressive. The farmer who sees a fine turnout gliding swiftly along a good thoroughfare catches the inspiration, steps quicker, thinks more and seeks to keep up with the spirit of progress. Good roads shorten the distance to markets, enable the farmer to reach market at less cost; enables the farmer's family to go to town over good roads and in a carriage that does not humiliate their self-respect. They enable them to go to church, to entertainments and to keep in touch with the world. He gets his mail oftener, hence, has a stimulus to read. In short, good roads, like abundant harvests, scatter blessings upon all, city and country alike. That farmer displays the wisest economy who maintains the greatest liberality to road improvement, and he is a benefactor who improves the thoroughfares of his county.

MANY ECONOMIC QUESTIONS.

The law of supply and demand, and of consumption and production, lie at the foundation of markets and are the basic principles upon which the farmer must build for success. The science of feeding and the effect of food upon product, are becoming more and more a problem to be solved. Elements of plant-food required by growing crops.

Plants that tend to improve soil conditions and those that rapidly exhaust fertility.

Wise crop rotation.

Greater ability on the part of farmers to increase soil fertility, and to conserve and restore it when exhausted.

Maximum crops at minimum cost.

Less acreage and better tillage—better utilization of all crops sown.

Less extensive farming and the adoption of more intensive methods.

Less marketing of coarse material, and more of finished products.

THE DEMANDS OF THE PRESENT.

I desire to devote considerable time to the consideration of a phase of this question in which I am deeply concerned.

The discontent manifested through the migration of country people to the cities, is a cause of serious alarm. The rural population is losing yearly its ratio to the whole. The urban population is rapidly increasing. Churches and schools in the country districts are not so well attended. Young people in the country do not see in farm life hopeful possibilities, and hence leave the farm, seeking broader fields for their ambition. It is to a correction of this narrow view of farm life, and to the equipment of the farmer for a larger measure of success that I am earnestly striving.

George Washington denominated farming as the most noble, the most useful and independent of all vocations. After he had led our armies to victory, and served two terms as president, he regarded it as no lowering of his dignity to return to his Virginia plantation.

The Sage of Monticello—the author of the Declaration of Independence—Thomas Jefferson, retired from the presidency to the farm.

President Washington, in his annual message to Congress, December 7, 1796, recommended the establishment of a university in which, among other things, the science of agriculture should be taught.

“It will not be doubted,” he said, “that with reference to either individual or national affairs, agriculture is of primary importance. In proportion as nations advance in population and other circumstances of maturity, this truth becomes more apparent and renders the cultivation of the soil more and more an object of public patronage. I have heretofore proposed to the consideration of Congress the expediency of establishing a National University and a Military Academy.”

The military academy was established, but no place provided for giving instruction in the science that has given to us the sinews of war, created our commerce, and made us mighty in peace.

Thomas Jefferson also recommended the teaching of agriculture in the universities.

It is the extolling of agriculture as a science, requiring skill and training, and affording grand possibilities, that I am seeking.

Horace Greeley, in answer to the question how to enrich worn out land, said, “Fertilize with brains.”

An English writer says, “Depression in agriculture is depression in brains.”

The imperative need of the hour is that agriculture be accorded its place of honor, viz: the foundation upon which our wealth and commerce depend.

This noble vocation should no longer be regarded as mere drudgery, but in the light of a complex science, demanding careful research and intense study.

The power to command the forces in nature's great laboratory requires skill of no low degree. The wisest economy will be displayed in qualifying and preparing men who in farming will be able to secure the best possible results. In defense of this position, I desire to devote considerable time in presenting the results attained in this and other countries through the teaching of the science of farming, not only in agricultural colleges, but in normal and common schools as well.

ASSOCIATION FOR THE IMPROVEMENT OF THE CONDITION OF THE POOR.

In 1895 an association was formed in New York City for the improvement of the condition of the poor. Hon. Abram S. Hewitt was made chairman and William H. Tolman secretary of a committee. This committee was composed of distinguished philanthropists, among whom was Hon. William E. Dodge. They found that the congested condition of cities is caused largely by conditions in the rural districts, which give rise to migration to the cities. They determined, if possible, to solve this economic problem. They believed the lack of proper training in the science of agriculture, its neglect and lack of consideration were the causes lying at the bottom of the trouble. They appointed a committee for the encouragement and promotion of agriculture. This committee appointed Mr. Geo. T. Powell director of a system of agricultural investigation. Mr. Powell, in his report to the committee, after examining into the depressed conditions of agriculture, the neglect of its proper study and the disposition to leave the farm, says:

"One of the great underlying causes for the discontentment that exists among farmers is the fact that, as a class, they have no special training or education for their business. One generation follows another, working from the same basis of experience mainly. The methods that gave success in the past fail to do so at present. The soil has been depleted over a wide range of territory. The active, energetic young men needed on the farm to develop better possibilities are leaving it, because they have but little education or training fitting them for the business, and, failing to achieve success in following the footsteps of their fathers, they seek other vocations." Continuing, he says: "One of the first steps to be taken to build up a more successful agriculture and a more prosperous rural population is to begin at the foundation, and in the public schools, attended by the farmers' and other rural children, teach some of the natural sciences, with their application to rural life. But a small per cent of the pupils receive instruction beyond the primary schools, and many in the country leave school without ever having learned anything about even the most elementary principles of the soil and the plant and other life so intimately connected with their welfare."

At the close of a series of agricultural schools held in Westchester county in February and March last (or 1896), under the auspices of the committee for the promotion of agriculture, a course of lectures on nature-study was given in the district schools, and also in the high schools of the same county. In these lectures lessons on plant-life and the relation of plants to the improvement of the soil were especially impressed. The wonderful power of clover to enrich the soil, and the importance of its culture and intelligent study, were clearly presented. At the close of some of these lectures in the school room, some farmers who were present, and who were among the most interested listeners and learners, rose to their feet and expressed their approbation of this method of instructing their children, saying it was the first time in their lives they had learned how clover benefited the soil, and if they could have had that instruction when they attended school their farms would have been much better and they would have been more prosperous.

Lessons in the science of entomology were also given. Specimens of fruit were exhibited, showing the effects of "coddling moth" upon the apple, accompanied by instruction on methods for its destruction.

The recent objection to the importation of American fruit into Germany emphasizes the necessity for instruction in entomology.

To encourage the study of plants the following offer was made: To each pupil of the schools visited who should make application for them, a half dozen strawberry plants were promised to be sent by mail, the pupils to plant and care for them, and study and write essays upon what they had learned about the plants during the school year. Many city scholars, noticing this offer in the papers, sent in requests for the plants, saying that, while they had no land in which to cultivate the strawberries, they would put them in boxes kept on roofs and in windows.

I have briefly referred to these offers to show the child-love for plants and nature-study. One boy writes from New York three months after he had received the plants: "I have several new plants from the runners. I am going to rent some land in the country and raise strawberries. Where can I purchase the plants?"

So abundant were the results of these experiments that at a special meeting of the committee for the promotion of agriculture in New York State, held Dec. 2, 1896, it was resolved that a committee, consisting of Messrs. Hewitt, Powell and Tolman, be a committee of three, with power to draft a bill, in coöperation with Senator Nixon, for extending the instruction of horticulture throughout the whole state and, in addition, providing for agricultural instruction. This wise conclusion was reached after a most careful investigation as to the promotion of the best interests of all city and country people alike.

The New York Association for Improving the Condition of the Poor, in its report on agricultural conditions and needs, at page 36, makes the following forceful declaration:

"That there is a successful solution of this most distressing experience through which we are passing, in this most remarkable transition period, there is not the slightest doubt in my mind; that we can and shall enter upon a higher development in the agriculture of our country than we have ever known, I am equally confident. That there will be building up of millions of contented, prosperous and happy homes again upon soil that today is watered with tears, there are many evidences to believe.

"The blessed way of deliverance is to be through the pleasant pathway of greater knowledge, which has always brought its blessing to everything to which it has been well applied.

"There is a general recognition throughout civilized countries that agriculture, the basic foundation upon which the life of the people must always depend, is impaired. With this clear recognition today, the light of power and science are being turned on to help in its upbuilding, the attention of public educators is becoming aroused, and our institutions of learning, with their splendid equipments, are turning their attention more in the direction of building up an educated, trained and skillful class of men and women in agricultural knowledge as they have heretofore done for other interests. These forces, with well directed financial influence and a close study of economic questions, together with a broad and liberal policy of the government, will make a combination of forces that must evolve certain and valuable results."

AGRICULTURAL DEPRESSION IN IRELAND—THE REMEDY.

The deplorable condition into which agriculture has declined in Ireland led to the appointment of a committee, composed of members of parliament and the most noted men of that country, to inquire into the causes of the agricultural and industrial depression. The Hon. Horace Plunkett, M. P., was made chairman. This committee, known as the Recess Committee, made an exhaustive investigation of agricultural conditions in other European countries and in August, 1896, submitted their report to the Right Hon. Gerald W. Balfour, M. P., Chief Secretary to the Lord Lieutenant of Ireland. The report says: "Hitherto but little interest has been aroused in Ireland in those economic problems for which this report suggests some solution." The report enumerates the different agricultural countries of Europe, and says: "The

organization of the farming class follows in all these countries." These organizations all receive government aid and encouragement. Especially has this aid been made manifest in special awards by the state of premiums for largest yields, best stock, etc. The most marked manifestation of sound economic wisdom has been agricultural education extending from the state agricultural colleges and experiment stations down to the common schools. I think it opportune at this time for us to note the growing interest and improved methods of agriculture in the old world. Competition with American farmers, who had unlimited areas of rich soil, forced the farmers of the old world to adopt economic methods which, sooner or later, we ourselves shall be compelled to adopt. I shall quote extensively from this report, published in Dublin, Belfast and London in 1896. At pages 53, 54 and 55 we read:

MARVELOUS RESULTS FOLLOW AGRICULTURAL INSTRUCTION IN THE
COMMON SCHOOLS.

"The most positive action of the State in assisting agriculture is taken in connection with education. Everywhere it is accepted as an axiom that technical knowledge and general enlightenment of the agricultural class are the most valuable of all levers of progress. The great sums spent by the various countries in promoting technical education, as applied to agriculture as well as to other industries, prove this. M. Marey-Oyens, the head of the Dutch Board of Commerce and Industry, and President of the Agricultural Council, says: 'Every guilder spent in the promotion of agricultural teaching brings back profit a hundredfold,' 'Every franc spent in agricultural teaching brings a brilliant return,' says the Belgian Minister of Agriculture in his message to Parliament last year. M. Tisserand attributes the great progress made by French agriculture since 1870, in a large measure, 'to our schools, our professors, our experiment station, and the illustrious men of science, whom the administration has induced to devote themselves to the study of agricultural questions.' Mr. H. M. Jenkins, in his report to the Royal Commission on Technical Instruction, says, 'The results of agricultural education in Denmark have been something extraordinary.' Danish butter is now the best in the world; in 1860 it was described by the British Vice-Consul at Copenhagen as 'execrably bad.' The progress since then is directly traceable to agricultural education.

"It will be necessary here to describe in detail the various systems of agricultural education adopted in the different countries. The most striking point is the great similarity in the main features of these systems. Almost everywhere there is a course of elementary practical instruction in agriculture given in the primary schools; there is a class of secondary schools in which a more extensive course is given to boys of from 13 to 16 or 17; and there is a system of higher training for the sons of large land owners and those intended to be managers of large estates, agricultural engineers and professors and teachers of agriculture. Most countries, however, have adopted a system of traveling instructors or professors, who not only superintend the agricultural courses given in the primary schools of their districts, but also hold conferences and give lectures and advise and keep themselves closely in touch with the actual cultivators of the soil. Agricultural schools for the farmers' daughters, in which they are taught what is called in France the lore of the farm yard and farm house, including the rearing of poultry, the feeding and tending of live stock, cooking, domestic economy and the keeping of farm accounts, are also to be found now in most of these countries.

* * * *

"Denmark has a staff of experts residing abroad to watch the interests of her staple agricultural exports and to advise the farmers as to the varying requirements of the market; and France has begun to appoint for a similar purpose agricultural attaches to her embassies."

Here we have presented the advantages of agricultural education. From page 143 I insert this brief note: "At the end of the last century Denmark was one of the poorest countries of Europe. Today it is one of the richest, according to population, and that progress in wealth is almost entirely repre-

sented by its progress in agriculture." These facts are so interesting because they illustrate what seems to me to be the essential elements of agricultural progress in Denmark.

After enumerating state aid to agriculture through a system of prizes and maintaining of traveling experts in bacon-curing and dairy interests, on page 162 the report says:

"Besides these and other indirect ways of promoting agricultural education, technical instruction in agriculture is given in state primary schools, which are gratuitous and compulsory. The high schools, which now receive a government grant, include technical training in their curriculum; and there are special agricultural schools in which agriculture is the chief subject, receiving a subsidy from the state."

On page 172 we find the following:

"The elaborate system of state aid to agriculture which now exists in France is only the creation of recent times. Until the second republic in 1848 no regular effort had been made by the state to establish agricultural education or any plan of general encouragement to agricultural industry."

From page 191 I make this extract:

AGRICULTURAL INSTRUCTION COMPULSORY.

"In addition to all these forms of instruction a course of agricultural teaching is now obligatory in every primary and upper primary schools in the rural districts of France. There are 79,000 primary schools in France, of which 13,000 are voluntary, with a nominal roll of 5,500,000 children; and of upper primary schools, which resemble the model schools in Ireland, there are 160, with 14,700 pupils.

Before making the agricultural course compulsory in these schools, the French government took a precaution which is worthy of special note, with the object of securing a supply of qualified teachers of that course. I have already pointed out that one of the duties of the departmental professors of agriculture is to give a course of instruction in agriculture to the teachers in training in the normal schools of the departments. The government enacted, in 1879, that the agricultural course should not become obligatory in the primary schools until three years after the departmental professors had begun this teaching in the normal schools.

"The agricultural course in the primary schools is thus a thoroughly competent one, and its efficiency has been enhanced by a further wise resolution of the government, namely, to avoid fixing a uniform programme for the various schools, and to leave it to the professors themselves, subject only to the control of the departmental professors, to shape their own programme in accordance with the agricultural character of their locality. The departmental professors constantly keep in touch with the primary schools and their teachers."

From the concluding portion of the report, I quote the following:

"Such, in general outline, is the work done by the state and the association of agriculturists in France today for the promotion of agricultural interests. As for the results which have been achieved, while it must be born in mind that the full fruition of such work as this, in connection with an industry such as agriculture, can only come after a long lapse of time, the improvements already effected in the agricultural condition of France are, nevertheless, remarkable. On this head, I can do no better than quote a passage from Monsieur Tisserand's latest report on agricultural education: 'While the average annual production of corn during the ten years which preceded 1870 was 98,000,000 hectolitres, the annual average for the ten years from 1882 to 1892 was 107,210,000 hectolitres, representing a yearly gain for agriculture of at least 135,000,000 f., notwithstanding the loss of Alsace-Lorraine.'"

The report makes this further extract from Monsieur Tisserand's report, which is very interesting:

"Monsieur Tisserand adds: 'Our schools now are far better attended than they used to be, everywhere people are working with zeal, and the scientific spirit has invaded the farm. Young men of intelligence are becoming more

attached to rural life, and the children brought up in our country districts when they receive an appropriate agricultural education will be less tempted to go into the towns to increase the already too great number of those chronic unemployed who constitute today a perpetual danger to society.' "

HOLLAND, BAVARIA AND HUNGARY.

Holland also encourages agriculture and provides education along this line. On page 263 the report says of Belgium:

"The teaching of agriculture and horticulture has received great impulse since 1890, the government and the local authorities combining their efforts in this direction as the most powerful help to agriculture."

On page 254 we find this:

"It is gratifying to see what strides are made in every kind of agricultural instruction. Schools of agriculture and horticulture, dairy, rural housekeeping, have been multiplied, either supported or subsidized by the state. * * * * All these means have powerfully tended to raise the intellectual standard of our people in the business of farming, and given such satisfactory results that the public authorities are determined to leave no stone unturned in this direction."

On page 306, the report, referring to Bavaria, says:

"Agricultural schools exist in every district, the state paying half the annual cost. They are of the simplest kind, intended for the sons of peasant farmers, and embracing a course of instruction in tillage, cattle-raising, arboriculture and market-gardening."

With reference to Hungary, the report has the following, among other things, to say:

"In fine, the state spends 43,000 pounds a year on agricultural schools, which turn out yearly one thousand young men, well versed in scientific farming. There is a general desire on the part of the Hungarian government and people to multiply these schools and model farms, especially those of the less costly description, intended for the sons of peasants. Meantime the benefit derived from these schools is incalculable in a country like Hungary, where agriculture is the chief occupation of the people. 'The man,' says Swift, 'who makes two blades of grass grow where only one grew before is a benefactor to the nation,' and so impressed are Hungarian statesmen with this idea, that their principal aim, since the recovery of their constitution, in 1867, has been to raise the intellectual level of the farming classes which they consider the best means for increasing the rural products of the kingdom."

IRELAND'S NEED.

The committee, in applying their investigations to conditions in Ireland, on page 88, make this appeal for industrial education:

"For the middle and upper classes of Ireland, speaking broadly, there are only three professions. A man has to make of his son either a lawyer, doctor or clergyman. The idea of treating as professions the callings of commerce, agriculture and manufactures and of providing them with a special professional education is not known here. Yet these three great professions stand at the head of the material interests of every country. They represent its productive forces, while the others, whatever their value otherwise, do not. They call for as wide and complex a variety of knowledge as any other profession, every branch of science is contributory to agriculture and manufactures. Our system of higher education in Ireland ought to aim in the future at raising these professions to their true place, and show our middle classes that there are other professional careers for their sons, besides those to which they have hitherto confined their ambition."

The foregoing emphasizes the economic wisdom of higher training for the profession of agriculture and manufactures, and shows their application to all countries.

OUR NEED.

Our dependence as a nation upon agriculture emphasizes the importance of a thorough knowledge of its science. As we magnify its importance we invite to its pursuit. As we neglect its demands, we drive from its fields to the congested cities. When viewed as a science, a profession, ambition sees possibilities for great achievements. When treated as drudgery, shorn of possibilities, its calling will be deserted. It is well to understand how to translate from the Greek and Latin roots into pure English, but it is of greater importance that our farmers understand the science of transposing, through plant roots the elements of the soil into abundant harvests and luscious fruits, thus supplying the wants of our people and commerce to the nation.

SOUND ECONOMY.

This principle is not circumscribed within such narrow bounds as to be applicable alone to the saving of money. The wise use of money is involved as well. Sound economic principles correctly applied will seek the promotion of agriculture, the elevation of farm-life and the general betterment of the conditions surrounding our farmers. We must seek to improve the home, we must add conveniences and attractions. The social and intellectual standard must be advanced. Mind is the dominant factor of success on the farm.

We want fewer farmers who follow the signs of the moon, and more who are governed by science. We need more high-thinking and less chronic grumbling. We want more men who can see possibilities and till their farms in the sunlight of hope, and fewer growlers and grumblers. We want more farmers who can present their grievances in forceful argument, fortified by truth and justice, and fewer who generalize their complaints and focus them on nothing in particular. We need more enthusiastic, wide-awake farmers to talk farming up, and fewer miserable failures to drag this noble vocation in the dust.

Prof. Eugene Davenport read the following letter from Gov. Luce, of Michigan, viz.:

COLDWATER, MICH., Feb. 20, 1898.

Prof. Eugene Davenport:

MY DEAR SIR:—More than thirty years ago I began to talk in a public way to my fellow citizens. Have continued to do so during all these years, and have never been compelled to cancel an engagement on account of ill health until now. But the first time has arrived. More than fifty years ago my left knee was broken. In time it recovered and has served a very good purpose until now. But rheumatism, seeking the weakest part, has attacked with great vigor and I am helpless.

With deep regret I am compelled to say that I can not be with you at the "round up" this week. I have written Mr. Butterfield and he may be able to send a better man of the Michigan workers.

Sincerely yours,

C. G. LUCE.

On motion of Prof. Davenport the Secretary was instructed to forward to Gov. Luce a letter of regret that he is unable to attend this Institute and expressing its sympathy for him in his affliction.

Hon. George McKerrow, Superintendent of Farm Institutes of Wisconsin, addressed the Institute on the

PRESENT STATUS OF FARMERS' INSTITUTES.

He said:

The question I am assigned to talk about is one I am unacquainted with. Had your committee assigned to me a topic along the line of farming or breeding of domestic animals I could have better entertained you at least. The foundation of American prosperity is agriculture. We are living in an age of progress. Agricultural colleges are springing up all over this country, and they are doing a great, grand work for us.

The bulk of American farmers and farmers' wives can not go to the agricultural colleges; therefore, if we would educate them we must of necessity go to them. Farmers' Institutes began very gradually to develop along this line, and while it is very hard to determine just when and where these Institutes began we may safely say that in this country for something like thirty years there have been Farmers' Institutes or meetings of the same nature. Now nearly all the states in the union have meetings that they denominate Institutes. In some cases they are widely different, placed under different management and sometimes it seems to me the objects sought are different.

Most of my Institute work has been in Wisconsin, where I reside, so I know most about the work there. The systems there are under diverse management. We have what we may term the extremely centralized state systems, which is in vogue by the State of Minnesota, in which the state does practically everything—placing the meetings, paying for the halls and sending a corps of speakers. They are under the direct supervision of a superintendent, without a program, but previously advertised by sending out posters and notices to the local papers, and by correspondence, and by getting a few of the leading business men and leading farmers interested. The superintendent comes there with his corps of speakers on the date set. In some states the school idea of the Institute seems to prevail. While in other states an experience meeting of the farmers seems to be the central idea. In Minnesota it is the school.

In other states it is a combination of the school and experience meeting. That is the idea that to my mind comes nearest the correct idea.

The superintendent in Minnesota selects from the states adjoining rather than among the farmers of Minnesota for teachers at these schools. He starts in one speaker upon a certain topic; if that does not seem to catch the sympathy of the audience that speaker is shut off at the end of five minutes and another one is put on to teach some other subject; if that gets better attention it is followed up for fifteen or twenty minutes. Then some other subject is taken up. So he goes on with the meeting, furnishing that kind of talk the people are interested in. A lot of questions are also put in a question box, which are taken up and discussed and answered at such intervals as may occur between speeches. This seems to be the one extreme of state supervision.

Our neighboring State of Iowa has the county system of Institutes. The money is appropriated from the state treasury to the extent of fifty dollars, I believe, and I don't know but it has been raised to a hundred for each county. They organize and hold their Institutes, each independent of its neighbor's. Here in Illinois I understand you have a combination of the county and state system. Twelve years ago the Legislature of Wisconsin appropriated five thousand dollars for the purpose of holding farmers' institutes. They placed the money under the direction of the regents of the State University, and the regents practically have seen fit to delegate and direct the handling of these funds to the farm committee of that board of regents, and they choose a superintendent and place the responsibility upon him to locate the meetings, to select the speakers, subject to their approval, of course; and they then hold him personally responsible for the success or failure of the meetings. That is the only thing I object to in my position in the State of Wisconsin. I would be willing to be held responsible for the successes, but not for the failures.

I will briefly outline the plan we follow now: It has been somewhat modified during the last twelve years. My predecessor, the late lamented W. H. Morrison, began this work when there was very little to build upon. He

was a man of a great deal of executive ability and builded well. He developed a system that was to some extent like the Minnesota system, but not so centralized. We have been slowly departing from that in the past four years, with a view to getting localities more interested, and adding the experience feature to the school feature by getting from two to four local farmers and farmers' wives to prepare papers to be presented at these Institutes. We have succeeded fairly well in this. In selecting places to hold these Institutes we ask the business men as well as farmers scattered over the State of Wisconsin to talk the matter up with their neighbors and when they find there is sufficient interest manifested in a certain locality to ask for an Institute and to do the necessary local work, they send a line to the office asking for a blank petition. This blank petition is a request for the placing of an Institute at their village or city, pledging themselves to do what lies in their power to make it a success. These petitions when signed are placed on file in the office. I spread them out before me with a map of the State and go carefully over them, comparing them with points or places that last had institutes—had them eight years ago or less. My first aim and object is to locate them at points that never have had Institutes, carrying this education, as I concede it to be, to the class of people that need it most.

I notice, in holding Institutes year after year at a central point, the same faces in the audience. When I talk with these men I find a great many of them are men who read the leading live stock and agricultural papers, who read the bulletins from our own and other experiment stations, who are thoroughly well posted farmers. We have grand Institutes there. The questions they ask and the parts they take in discussions are intelligent and up to date; but I believe that the Institute is intended not only for those men, but for those who have not had the advantages they have had. When we go back to the town hall or grange hall, at the grocery store, to the little church out in the country, while we can not gather in so many of the men I have just alluded to, I feel we are doing more good, and therefore my first impulse in locating these meetings is to select new points that have never before been reached by Institutes.

The next is to reach points that have only been reached once or twice before.

The next is to reach points that have been deprived of Institutes for two or three years, that we might reach the back-woods points.

And the object I have in view is to cover the State fairly and fully so that every farmer in the State may have the privilege of attending at least one of these meetings. When I have selected the list for as many Institutes as we can hold during the winter it is submitted to this farming committee for its sanction.

I also look over the State for the workers that are to do the work during this winter season. The bulk of the teaching in Wisconsin Institutes is done by practical farmers of Wisconsin. In selecting workers, their moral standing, their honesty, success in business are inquired into. They must have the ability to explain the methods by which they attained success; and also to generally interest an audience. Sometimes in these meetings a half day is spent in asking and answering questions. We aim to impress upon the farmers that the meeting is theirs, not ours; that to make it a success they must take the principal part. We also have experts who travel around to aid these conductors of meetings when necessary.

We hold Institutes four days in a week—Tuesday, Wednesday, Thursday and Friday.

There is one thing I must speak of. I was pleased this morning to listen to these magnificent papers by the three ladies who furnished them. In Wisconsin we have been making an effort to enlist the ladies and the young men and girls. In the last three years we have held eleven cooking schools in connection with our Institutes, in separate halls, during the afternoon of each of the two days, in the more central points in Wisconsin. They consist in lectures and demonstrations. We have had some excellent papers presented at our

Institutes, but I am here to say that I never heard together three papers or talks by ladies that were so clear cut and so pointed as the three I listened to this morning here in Illinois.

In some places to stimulate interest prizes are offered by the business men for certain farm products. It has proven quite a success, and the merchants regard it as a profitable thing to do, and a good advertisement.

Miss Stuvé favored the audience with a vocal selection and a response to an encore.

W. C. Latta, Professor of Agriculture and Superintendent of Institutes of Indiana, read the following paper on "The Future of Farmers Institutes," viz.:

FUTURE OF FARMERS' INSTITUTES.

Concerning this subject two questions may be asked: (1) Is there a future for Farmers' Institutes? (2) If so, what will that future be?

There are those who think the Institute work will be short lived; that it has sprung into prominence so suddenly as to cause a reaction; in short, that it will prove like the mushroom which springs up in a night to wither in a day. Is this view well founded?

Is it true, first, that Farmers' Institutes are of comparatively recent origin; second, that they have rapidly grown into popular favor; and third, that, under the encouragement of state enactments, they have sprung into existence, apparently full-fledged in centers remote from each other—broken out, as it were, like a boil in a new spot.

But these indications of spontaneity, that some consider the ear-marks of a boom which will become a boomerang, are more apparent than real.

Farmers toiling in isolation felt their need of exchanging experiences and hence farmers' clubs, granges, local horticultural societies, etc., sprang up to meet this need. But while these organizations have been and are doing an excellent work, they have accentuated the demand for something that would give a still broader view, something that would lift the farmers on the hill-tops of observation from which standpoint, in the growing light of science, might compare and harmonize their varied experiences independently wrought out on the lower levels. In response to this demand came the annual industrial conventions at the State capitals or other large cities. Although doing an excellent work, these annual conventions are inadequate because remote from the great mass of farmers. Then some fertile brain conceived the idea of carrying these conventions to the farmers, and lo, Farmers' Institutes are the result.

Like an orchard which was brown and bare yesterday but clothed in beauty today, so Farmers' Institutes seem to have suddenly blossomed into existence. This view, however, is a superficial one. Just as the fruit trees take months to prepare for the blooming, so Farmers' Institutes are the outgrowth of a gradual development whose beginnings date back many years.

There has been a gradual awakening to and development of a more intellectual life on the farm, and the various farmers' organizations culminating in Farmers' Institutes, both minister and give expression to this life.

If these several farmers' organizations had, one after another, gone down to give place to something better, we might then expect that Farmers' Institutes would, in turn, eventually be set aside by something yet to come. Instead of being thrown into the background farmers' clubs are rapidly developing on every hand. The grange is a more compact, more efficient and more useful organization today than ever before. True, agricultural fairs are now, in many instances, in a condition of decadence. We are not to understand by this that they have necessarily outlived their usefulness, but rather that their original purpose has been subverted.

Each of the organizations just alluded to fills a niche in the great system of agricultural education and will therefore remain, as the necessity for education abides. Likewise Farmers' Institutes must continue so long as they meet the need which brought them into existence.

There is, therefore, a future—an abiding future—for Farmers' Institutes.

But to take up the second question, what is that future to be? That depends. Just what will be the future of Farmers' Institutes is of course a matter of conjecture. That future will be great and glorious just in proportion to what they accomplish in the upbuilding of agriculture and in the promotion of the general prosperity. I believe we are standing as yet only on the threshold of the larger good to be accomplished through Farmers' Institutes. We have gathered but a few handfuls of the great harvest to be garnered.

Permit me to suggest some of the lines of work, only just begun, which Farmers' Institutes are peculiarly fitted to carry forward to completion. I would name first the arousing of the rank and file of farmers to adopt the methods of their more progressive and more successful neighbors. Only a good beginning has thus far been made, even in this line of material benefits—good roads. Second, it is the province of the Institute work to enter the farmer's home, lighten its labors, multiply its conveniences, increase its comforts, add to its cheer and inspire its inmates to reach out after the possibilities of life in the country. With the improvement of the farm and the elevation of the home—two fundamental benefits—larger results will become possible. A third very important line of work is the fraternization of the farmers. They are to become better acquainted, more neighborly, more sociable, more hopeful, more truly loyal to each other and to the cause of agriculture. A fourth great object to be secured is the unification of farmers in thought and action upon questions affecting their own and the public weal. It is, I believe, the province of Farmers' Institutes to speed the day when the shibboleth of the wily politician can no longer split a community of farmers into wrangling factions. A fifth great end to be accomplished is the establishment of friendly relations among all classes of workers.

The Farmers' Institute may be, and I think should be, an open parliament for the discussion of questions of mutual interest to manufacturer, merchant, farmer, railroad manager, capitalist and laborer, producer and consumer. In this way the different classes would come to know and respect each other. Differences would vanish, good will and coöperation would be the result. The good already accomplished in this line by Farmers' Institutes is a most encouraging omen of the approach of an era of more friendly feeling and more united action; an era in which men will recognize as first and foremost the higher relationships of citizen and neighbor.

In the sixth place the Farmers' Institutes have a mission of overshadowing importances in the field of education. The country schools are to be improved. The children of even the poorest farmers are to receive such instruction as will open their eyes to the beauties of nature and give them a higher and truer conception of the dignity and importance of agriculture.

Farmers' Institutes may, and should, lead the farmer to recognize the superlative importance of education, the higher as well as the more elementary, as a means of elevating the agricultural classes to their proper rank.

Farmers' Institutes may bring the achievements of science to the farmer and show their applications to every-day life. They may bring the farmers to the fountains of knowledge and enable the farmer, scientist and educator to join hands in a united effort to bring the agricultural classes to their best estate.

Farmers now quite generally recognize the beneficial work of the Agricultural Experiment Stations, but comparatively few are taking full advantage of this work. There is, in recent years, an encouraging growth of sentiment in favor of agricultural education, but as a rule, even the staunchest advocates among farmers of such education, recommend it only for other farmers' sons and daughters.

There is thus a golden opportunity for Farmers' Institutes to bring the farmer and the agricultural college and experiment station together in such mutually helpful relations as will surely benefit the one and greatly increase the usefulness of the others.

Until the lines of work indicated are intelligently and faithfully pushed to a satisfactory issue, Farmers' Institutes will not have fulfilled their mission. And even when this consummation shall have been reached, there will be new fields to enter.

Let the Institutes continue to be so managed and conducted as to secure the highest good to the agricultural classes and promote the general welfare, and their future is certain, as the people will not let them die.

Prof. Davenport announced that the sugar beet convention would assemble at this place tomorrow morning at nine o'clock.

On motion of Mr. Judd a vote of thanks was given Gov. Mount, Superintendent McKerrow and Prof. Latta for their able addresses.

Mr. Higgins was called upon for a song. He sang the foot ball "game," and to an encore he responded with "Patsey McGann."

The Committee on Resolutions, through its chairman, Col. Charles F. Mills, reported the following resolutions, which were adopted unanimously:

WHEREAS, The very complete and interesting program of papers prepared for the third annual meeting of the Illinois Farmers' Institute and covering so fully the various fields of rural husbandry has been made most effective for good by the able and enterprising presentation of practical information by the speakers, therefore be it

Resolved, That too much praise can not be extended the speakers who have so cheerfully contributed of their time and experience in the preparation of the addresses that have been received with such unmistakable evidences of high appreciation by all in attendance.

Resolved, That the music furnished the various sessions of the Institute by the musical organizations of the University have added much to the enjoyment of the meetings and evince a high order of talent and excellence in rendition, and that we are greatly indebted to all who have thus contributed to the pleasure of our meetings.

WHEREAS, The full measure of success attending the third annual meeting of the Illinois Farmers' Institute is due to the excellent local arrangements made therefor by the faculty of the University of Illinois and the citizens of Champaign and Urbana, therefore be it

Resolved, That the thanks of all in attendance at this meeting are due and hereby extended to President Draper and his associated professors for their excellent and timely services.

Resolved, That the citizens of Urbana and Champaign who have assisted in making the very complete and satisfactory arrangements for this meeting are entitled to a full measure of our thanks and that their cordial and hearty reception will ever be held in pleasant remembrance.

RESOLUTIONS FOR THE SUGAR BEET.

WHEREAS, The interest manifested in the culture of sugar beets in the State of Illinois has assumed considerable prominence in the minds of our agricultural classes, and

WHEREAS, Such an industry promises to be of such an incalculable benefit to the agricultural interests of this State, and

WHEREAS, The Experiment Station, located at Champaign and Urbana, has rendered such valuable and complete statistics as to the tests already made, therefore be it

Resolved, By the Illinois Farmers' Institute, now assembled at Champaign, that the next Legislature be requested to appropriate such funds as may be necessary to encourage more complete experiments as to the adaptability of the soil in different parts of the State for beet culture; be it further

Resolved, That the funds thus appropriated be used for the necessary expenses of providing the seed and furnishing the farmers information on this subject and establishing the industry upon a safe basis in this State.

Resolved, That we learn with deep sorrow of the death of Dr. Manly Miles, the first professor of agriculture in America, and at one time employed at the University of Illinois.

WHEREAS, The agricultural interests of our great State are paramount to all others, and

WHEREAS, A careful examination has revealed to us the fact that the University of Illinois has not been able to attain its greatest usefulness to the farmers of the State on account of the meagre equipment of its agricultural department; therefore, be it

Resolved, By the Illinois Farmers' Institute, now in session at Champaign, that we petition the Legislature of 1899 to carefully investigate the needs of the agricultural department of our University and furnish this department with such buildings and equipments as are commensurate with the dignity of the University under its present able faculty and fully commensurate with the exacting demands of both practical and scientific farming.

Resolved, By the Illinois State Farmers' Institute, in annual convention assembled, that the earnest attention of the Illinois Congressional delegation is called to House Bill 6894, now pending before the House of Representatives in Washington, to provide rules and regulations governing the importation and inspection of nursery stock. It is the judgment of this Institute that this bill embodies a valuable principle already recognized by our state and national governments in well-established legislation concerning other agricultural interests, and that it will serve effectually to protect the horticultural interests of America against very serious dangers now threatening them. We desire to see this bill, or its substantial equivalent, become a law.

Resolved, That we commend to the State Legislature of Illinois and to the Governor of the State the legal protection of horticultural and agricultural property against injury due to the importation and unrestricted increase and distribution of injurious insects and fungi, and that we earnestly recommend the passage of a law establishing an efficient system of inspection and control under State authority for the prevention of such importations and distributions. We regard especially the occurrence of the San José scale in Illinois under existing conditions as a menace to the nursery and the farm orchard which constitutes an emergency in horticulture such as to require prompt and energetic action under authority of law.

WHEREAS, The adulteration of food and drugs for human consumption has come to be one of the great and growing evils of this country, and

WHEREAS, The keen competition in business has compelled dealers and individuals to resort to this method of holding trade, and

WHEREAS, It has had a demoralizing influence not only upon dealers but upon consumers, therefore be it

Resolved, By the Farmers' Institute here assembled that we ask the Legislature of the State of Illinois to provide for a commission whose duty it will be to prosecute all offenders under our present pure food laws; and be it further

Resolved, That we ask the Legislature of the State of Illinois to strengthen and broaden the laws against adulteration of food and drugs in such a way that there will be no possibility of escape for offenders under that law when prosecuted by the proper officials, and be it further

Resolved, That this commission be provided with sufficient funds and backed by the authorities of the State to that extent that they can be independent, and thereby see that the laws providing for the punishment of offenders against the pure food and drug acts will be punished. And be it further

Resolved, That the producers of food, the farmers, are the ones who are suffering the most from this general adulteration of food products, and be it further

Resolved, That the farmers themselves are the ones to take the initiative in seeing to it that such legislators that are not outspoken in favor of laws against food adulteration shall be elected to stay at home, and be it further

Resolved, That Illinois farmers and food producers and State Farmers' Institute do hereby pledge ourselves without reference to party affiliations to vote for only such men for legislators as will pledge themselves to support and maintain such laws.

WHEREAS, The United States government is not at present expending any funds for the particular purpose of securing a larger market for American corn in European countries; and

WHEREAS, An increase in the export of corn and cornmeal—the cheapest of all food products—is a matter of pecuniary interest to the producers of Illinois, both in respect to the value of their lands and the income from them, as well as to the farmers in all the states comprising what is known as the corn belt, and

WHEREAS, An increase in these exports will also be an important factor in developing railroad, lake and ocean commerce, as well as influencing cheaper ocean rates in foreign bottoms; therefore be it

Resolved, By the Illinois Farmers' Institute, that the Senators and Representatives in Congress from this State be urged in the interests of their constituents—a majority of whom are producers of this staple—to consider and advocate in Congress special appropriations for special work, particularly in connection with the Paris Exposition of 1900, in the way of educating the people of Europe in the many and diverse uses of this great American cereal and its value as cheap human food; and also to quicken the interest and secure the continuous aid of our diplomatic and consular representatives in opening up wider foreign markets for this food product; and be it further

Resolved, That the President and Secretary of this Institute be instructed to send copies of these resolutions to Members of Congress and to each of our United States Senators.

WHEREAS, The enthusiasm of the audience at our morning session demonstrated the interest felt in the subject of domestic science, and

WHEREAS, We believe the time has come in which we ought to take some action for the advancement of this work in our State.

Resolved, That the Illinois Farmers' Institute request the State Board of Agriculture to provide a kitchen, well equipped with working materials, in which object-lessons in scientific cooking can be given each year upon the State fair grounds.

WHEREAS, The prime object of Farmers' Institute meetings is the advancement of agricultural education and the promotion of the social and the material interests of the producing classes, and

WHEREAS, The meetings of County Farmers' Institutes present superior advantages for directing the attention of our youth to the great benefit that will result from agricultural education, and

WHEREAS, The State Agricultural College of Illinois provides excellent facilities for the study of all matters pertaining to farm life, therefore be it

Resolved, That the County Farmers' Institutes of Illinois be and are hereby requested to encourage the boys and girls of their respective counties to attend and enjoy the educational advantages of the Illinois Agricultural College.

Resolved, That the thanks of the Illinois Farmers' Institute are due and are hereby extended to the Chicago Tribune, the Bloomington Pantagraph for the free and satisfactory reports prepared by their special representatives and so fully published.

Resolved, That the Champaign and other papers published throughout the State have rendered the Illinois Farmers' Institute meeting most excellent services in calling attention to this session and encouraging attendance thereto.

After hearing reports from some of the directors as to the condition of Farmers' Institute work in the various Congressional districts, all of whom reported progress and enthusiasm in the work, the Institute adjourned.

CONVENTION OF DELEGATES ILLINOIS FARMERS' INSTITUTES.

The convention of delegates called for the purpose of selecting directors of the Illinois Farmers Institutes for the Congressional districts of odd numbers, met in the Faculty room, University Hall, Champaign, February 24, 1898, at 8:30 o'clock p. m.

The meeting was called to order by Hon. A. F. Moore, President of the Illinois Farmers' Institute.

Mr. Oliver Wilson was elected Secretary.

The following call for the convention of delegates was read as published in the announcement of the annual meeting of the Illinois Farmers' Institute:

NOTICE OF MEETING.

The delegates from the several Congressional districts will meet for conference at 8:30 o'clock a. m., Thursday, February 24, 1898, in Faculty Room, University Hall, and select directors of the Illinois Farmers' Institutes for the Congressional districts of odd numbers as provided in the act of the General Assembly creating the same, and after the reports by Congressional delegations of the election of directors to serve for the ensuing two years as members of the Illinois Farmers' Institute, the programme for the morning session will be considered.

The President stated that the law provided for the election at this meeting of one director from each Congressional district of the State of odd numbers, said director to be selected by the delegates from the district present at the annual meeting of this organization.

The convention, on motion, took a recess of ten minutes to enable the delegates present to be assembled by Congressional districts for the purpose of selecting directors for the odd numbered districts to serve for the ensuing year.

After recess the delegates were again assembled and were called to order by President Moore.

Reports by congressional delegations were then called for from the districts of odd number as to the election of directors for the ensuing two years, as provided for in the act creating the Illinois Farmers' Institute.

Reports of delegates from the respective districts and the director elected from each district were then called for, duly announced by the Secretary of the Congressional district, filed and ordered spread upon the record, viz.:

FIRST CONGRESSIONAL DISTRICT.

Director elected 1896-1899, Charles H. Dolton, Dolton, Ill., by the following delegates. Officers district delegation, Jonathan Periam, Chairman; Edwin A. Karst, Secretary.

County.	Delegates.	Post Office.
Cook	Jonathan Periam	526 Englewood ave., Chicago.....
"	F. C. Rossiter	1004 W. VanBuren st., Chicago
"	Edwin A. Karst.....	5600 Cottage Grove ave., Chicago.....

THIRD CONGRESSIONAL DISTRICT.

Director elected 1898-1899, Mrs. Sara Strenberg, 145 LaSalle street, Chicago, by the following delegates. Officers district delegation, Jonathan Periam, Chairman; Edwin A. Karst, Secretary.

County.	Delegates.	Post Office.
Cook	Jonathan Periam	526 Englewood ave., Chicago.....
"	F. C. Rossiter	1004 W. VanBuren st., Chicago
"	Edwin A. Karst.....	5600 Cottage Grove ave., Chicago.....

FIFTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, E. G. Uhlim, Chicago, by the following delegates. Officers district delegation, Jonathan Periam, Chairman; Edwin A. Karst, Secretary.

County.	Delegates.	Post Office.
Cook	Jonathan Periam	526 Englewood ave., Chicago, Illinois.....
"	F. C. Rossiter	1004 W. VanBuren st., Chicago, Illinois.....
"	Edwin A. Karst.....	5600 Cottage Grove ave., Chicago, Illinois.....

SEVENTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, C. J. Lindeman, 145 LaSalle street, Chicago, by the following delegates. Officers district delegation, Jonathan Periam, Chairman; Edwin A. Karst, Secretary.

County.	Delegates.	Post Office.
Cook	Jonathan Periam	526 Englewood ave., Chicago, Illinois.....
"	F. C. Rossiter	1004 W. VanBuren st., Chicago, Illinois.....
"	Edwin A. Karst.....	5600 Cottage Grove ave., Chicago, Illinois.....

NINTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, Amos F. Moore, Polo, Ill., by the following delegation. A. J. Lovejoy, Chairman; _____, Secretary.

County.	Delegate.	Post Office.
Boone.....		
Carroll.....	A. B. Hostetter.....	Mt. Carroll.....
Jo Daviess.....	G. W. Pepoon.....	
Lee.....	J. D. Hartwell.....	Dixon.....
	A. G. Judd.....	
Ogle.....	Amos F. Moore.....	Polo.....
Stephenson.....	H. R. Cotta.....	Freeport.....
".....	J. W. Stocks.....	Eleroy.....
".....	L. M. Swanzy.....	Ridott.....
Winnebago.....	A. J. Lovejoy.....	Rosece.....

ELEVENTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, G. A. Wilmarth, Seneca, Ill., by the following delegation. E. S. Fursman, Chairman; S. G. Chapman, Secretary.

Bureau.....	David Knight.....	Princeton.....
".....	F. J. Nye.....	Tiskilwa.....
".....	C. C. Pervier.....	Sheffield.....
LaSalle.....	Mrs. L. G. Chapman.....	Freedom.....
".....	C. H. Dana.....	Waltham.....
".....	F. M. Higgins.....	Seneca.....
Livingston.....	Stephen J. Lyons.....	Odell.....
".....	John L. Walker.....	
".....	Elias Virgin.....	Fairbury.....
Woodford.....	J. M. Davison.....	Eureka.....
".....	E. S. Fursman.....	El Paso.....

THIRTEENTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, S. Noble King, Bloomington, Ill., by the following delegation. John A. Scott, Chairman; E. D. Funk, Secretary.

County.	Delegate.	Post Office.
Champaign.....		Champaign.....
".....		Sidney.....
DeWitt.....		Weldon.....
".....		Clinton.....
Douglas.....		
".....		
Ford.....		Camargo.....
".....		Paxton.....
".....		Kempton.....
McLean.....		Proctor.....
".....		Bloomington.....
".....		
Piatt.....		Danvers.....
".....		
".....		Monticello.....

FIFTEENTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, G. W. Dean, Adams, Ill., by the following delegation. S. S. Chapman, Chairman; Fred G. Miner, Secretary.

County.	Delegate.	Post Office.
Adams	S. N. Black	Clayton
"	G. W. Dean	Adams
"	J. B. Frisbie	Mendon
Brown .....	.....	.....
Hancock	S. S. Chapman	Carthage
"	S. D. Clark .....	.....
Henderson .....	.....	.....
McDonough	M. McElvain .....	.....
"	Mrs. M. McElvain .....	.....
"	A. R. Stickle	Good Hope
Schuyler	M. W. Greer	Puntsville
"	L. F. King	Rushville
Warren .....	.....	.....

SEVENTEENTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, Charles F. Mills, Springfield, Ill., by the following delegation. R. J. Stone, Chairman; Fred H. Rankin, Secretary.

County.	Delegate.	Postoffice.
Christian	Harry Grundy	Morrisonville
"	R. J. Stone	Stonington
"	S. C. Wagener	Pana
Logan	J. A. Critchfield	Broadwell
Macon	George Betzer	Oreana
"	John Rucker	Long Creek
"	C. A. Threft	Forsyth
Menard	Fred H. Rankin	Athens
"	J. N. Rutledge	Petersburg
"	Geo. Williams	Athens
Sangamon	L. H. Coleman	Springfield
"	Charles F. Mills	Springfield
"	James A. Jones	Bradfordton

NINETEENTH CONGRESSIONAL DISTRICT.

Director elected 1898-1899, D. H. Shank, Paris, Ill., by the following delegation. William McAdam, Chairman; ———, Secretary.

County.	Delegate.	Postoffice.
Clark .....	.....	.....
Coles .....	.....	.....
Crawford	John D. Trimble	Trimble
Cumberland .....	.....	.....
Edgar	Geo. H. Gordon	Paris
"	J. M. Hollingsworth	Ridge Farm
"	Wm. McAdam, Sr.	Kansas
Effingham .....	.....	.....
Jasper	J. M. Geddes .....	.....
Lawrence .....	.....	.....
Richland .....	.....	.....

TWENTY-FIRST CONGRESSIONAL DISTRICT.

Director elected 1898-1899, W. H. Kinsey, Tamaroa, Ill., by the following delegation. Geo. H. Wilson, Chairman; _____, Secretary.

County.	Delegate.	Postoffice.
Clinton .....	.....	.....
Marion.....	.....	.....
Monroe .....	.....	.....
Perry	Wm. Jackson.....	.....
Randolph.....	Geo. W. Wilson.....	.....
St. Clair	Fred Helms	Belleville.....
Washington.....	A. A. Hinckley.....	.....

The following list of directors reported by the respective delegations as having been duly elected directors of the Illinois Farmers' Institute for 1898-1899 pursuant to law was read, viz.:

District.	Name of Director.	Postoffice.
First.....	Charles H. Dolton	Dolton Station.....
Third	Mrs. Sara Steenberg.....	145 LaSalle st., Chicago
Fifth.....	E. Grehlein.....	Chicago.....
Seventh.....	C. J. Lindermann.....	145 LaSalle st., Chicago
Ninth	Amos F. Moore.....	Polo
Eleventh	G. A. Wilmarth	Seneca
Thirteenth.....	S. Noble King.....	Bloomington.....
Fifteenth.....	G. W. Dean.....	Adams.....
Seventeenth	Charles F. Mills.....	Springfield.....
Nineteenth	D. H. Shank.....	Paris
Twenty-first.....	W. R. Kimsey.....	Tamaroa.....

Motion adopted that the convention of delegates ratify the action of the respective Congressional district delegations in the election of the directors for the districts of odd numbers as named above.

Adjourned *sine die*.

OLIVER WILSON,
Secretary.

AMOS F. MOORE,
Chairman.

MINUTES OF MEETINGS OF DIRECTORS OF THE ILLINOIS FARMERS' INSTITUTE.

STATE HOUSE,
SPRINGFIELD, ILLINOIS, March 2, 1897.

Board of Directors met as per adjournment. Called to order by President Palmer.

Present, Bartlett, Moore, Cooledge, Palmer, Grout, Sawyer and Mills.

Motion by Bartlett adopted that the Board proceed to the election of officers for the ensuing year.

In pursuance of said motion, the following gentlemen were nominated for the respective places and there being no other nominations, the Secretary was instructed to cast the vote of those present for Amos F. Moore, of Polo, for President, J. H. Cooledge, of Galesburg, for Vice-President, W. E. Robinson, of Greenville, for Secretary, and Thomas W. Wilson, of Springfield, for Treasurer.

The Secretary announced the vote so cast and the above named gentlemen were declared elected.

Director Palmer submitted the following rules for the government of the Board of Directors of the Illinois Farmers' Institute:

Rule 1. This Board shall meet upon the direction of the President, the Secretary mailing to each member a notice of said call at least five days before the meeting.

Rule 2. The Secretary shall call a meeting of the Board upon the written request of five members thereof, at the rooms of this Board in the capitol building, by his mailing to each member a notice of the meeting at least five days before the time fixed for the same.

Rule 3. It shall be the duty of the Secretary of this Board to attend all meetings of the same and keep a true and correct record of the meeting, conduct a correspondence for this Board and perform such other duties as may be requested by the President or Executive Committee.

Rule 4. The President of this Board shall be ex-officio member of all committees.

Rule 5. To expedite the work of the Board, the following additional committees of four each, shall be appointed by the President of the Board, to-wit:

Section 1.

1. Executive and Finance.
2. Literary program for State Institute.
3. Exhibit and local arrangements for State Institute.

4. Systematizing and organizing County Institutes.
5. Speakers for County Institutes.
6. Special features for the improvement of County Institutes.

Section 2. It shall be the duty of the Executive and Finance committee to have general charge and control of the finances of this organization, to audit and allow all bills against the Illinois Farmers' Institute, and have general control and management of the affairs of the Board of Directors, when the same is not in session. It shall, at each meeting of the Board, report the general condition and finances of the organization and make such recommendations concerning the same, as they may think proper.

Section 3. The committee on Literary Program for State Institute shall thoroughly inform themselves as to who are the very best and most entertaining and practical speakers, who will attend the State Institute, select speakers, arrange the literary program and generally provide for a literary feast at the meeting of the State Institute.

Section 4. It shall be the duty of the Committee on Exhibit and Local Arrangements for State Institute to arrange a premium list for State Institute and advertise same, encourage exhibitors to exhibit thereat, to select a superintendent of exhibits, committee on awards and proper place for showing of articles on exhibition. Also provide a place of meeting for State Institute and see that the same is in proper condition for said meeting.

Section 5. It shall be the duty of the Committee on Systematizing and Organizing County Institutes to encourage the organization of Institutes in counties, not now organized, to suggest dates for all County Institutes, so that the same will not unnecessarily conflict, having in view the attendance of good speakers without conflict of dates and at a minimum cost.

Section 6. It shall be the duty of the Committee on Speakers for County Institutes to thoroughly inform themselves as to able and practical farmers who are entertaining speakers, and make arrangements with them for attending such institutes as may desire their services in making the County Institutes more entertaining and instructive.

Section 7. It shall be the duty of the Committee on Special Features for the Improvement of County Institutes to thoroughly inform themselves as to what things prove most entertaining, instructive and pleasing to County Institutes, and study the features of institutes in other states which seem profitable to farmers, and from time to time recommend to this Board such improvements as the result of their investigations commend.

Rule 6. The President shall also appoint a general legislative committee of six members, whose duty it shall be to have general charge and promotion of legislation, which has been determined upon by this Board of Directors.

Said rules were considered, section by section, and upon motion adopted as a whole by a unanimous vote.

Director Palmer presented draft of bill to introduce in Legislature.

Same was referred to special committee, consisting of Palmer, Bartlett, and Sawyer.

On motion adjourned to meet at 2 o'clock p. m.

AFTERNOON SESSION.

Board met at 2 o'clock p. m., as per adjournment. Roll call showed same present as at morning session.

Director Coolidge moved that Messrs. Palmer and Mills be appointed a special committee to edit and publish a report of last State Institute. Motion carried and it was so ordered.

President Moore announced his appointment of the following standing committees, as provided by the rules of the Board:

Executive and Finance Committee—Palmer, Coolidge, Bartlett, Mann, Moore.

Literary Program State Institute Committee—Wilson, Grout, Sawyer, Coolidge and Moore.

Exhibit and Local Arrangement State Institute Committee—Mills, Dean, Beal, Palmer and Moore.

Systematizing and Organizing County Committee—Beal, Davenport, Pierce, Mills and Moore.

Speakers for County Institutes Committee—Bartlett, Goodrich, Gurler, Mann and Moore.

Special Features for Improvement County Institutes Committee—Grout, Inglis, Sawyer, Willmarth and Moore.

Legislative Committee—Coolidge, Palmer, Mills, Mann, Inglis, Bartlett and Moore.

Resignations of W. H. Wallace and A. B. Ogle, representing the 19th and 21st districts, respectively, read and on motion accepted.

Secretary Robinson was instructed to investigate the matter of available men with which to fill vacancies on the Board and report at the next meeting.

Mr. Bartlett reported for the committee, to whom was referred the appropriation bill, presented by Mr. Palmer.

After full consideration, the bill as amended was ordered placed in the hands of the Legislative Committee.

Ex-Secretary Mills made report of finances. On motion the Secretary was instructed to draw an order on the Treasurer for \$85.00 in favor of the Illinois State Register, on account.

The following resolution was introduced and unanimously adopted:

WHEREAS, The amount of good in the way of education to the greatest number of farmers, has been through the medium of the Farmers' Institute of the State of Illinois,

WHEREAS, The number of institutes organized throughout the various counties of the State and the large number of members taking active part in the same, is due to its efficient officers, therefore be it

Resolved, That the directors of the Illinois Farmers' Institute extend a vote of thanks to F. M. Palmer, their late President, for the untiring and impartial manner he has performed his duties during the past two years, therefore be it

Resolved, That the directors of the Illinois Farmers' Institute extend a vote of thanks to Charles F. Mills, their late Secretary, for the untiring and impartial manner he has performed his duties during the past two years.

On motion it was ordered that Miss Carrie Bull be paid \$50.00, for her past services in full, and that the Secretary be instructed to draw a warrant for said amount upon the Treasurer, to be paid from the first available funds.

Upon motion adjourned.

W. E. ROBINSON,
Secretary.

AMOS F. MOORE,
President.

SPRINGFIELD, ILLINOIS, June 8, 1897.

Board met pursuant to call. Roll call showed directors Moore, Coolidge, Palmer, Grout, Mills and Inglis present.

On motion President Moore was empowered to appoint a committee of three to make investigation as to rooms in the State House for the Board and secure an order for publishing report of State Institute.

The committee so appointed consisted of Inglis, Palmer and Secretary Robinson.

On motion adjourned to 1:30 p. m.

AFTERNOON SESSION.

Board met as per adjournment.

Committee on rooms and publishing report made report as follows:

SPRINGFIELD, June 8, 1897.

To the Board of Directors, Illinois State Farmers' Institute:

Gentlemen—Your committee on rooms and publication of annual report, beg leave to report that they have seen Secretary of State Rose and were by him informed that the room now occupied could be retained by this Board, but that room 12 could not be had.

Further, that your committee secured from Gov. Tanner an order for the publication of 10,000 copies of the report of 1897, in binding similar to that of report of 1896 and filed said order with the Secretary of State.

Respectfully submitted,

S. M. INGLIS,
F. M. PALMER,
W. E. ROBINSON.

Further consideration of question of rooms referred to executive committee by motion. Director Mills moved that a committee of three be named to arrange for conference of institute workers to be held in Springfield, Wednesday evening, September 29. Motion withdrawn.

By motion of Director Coolidge it was ordered the Treasurer, Thos. W. Wilson, be required to give bond in the sum of \$15,000.00, said bond to be approved by the Finance Committee and filed with the Secretary.

Director Palmer made a motion that the Secretary be authorized and directed to purchase a well bound book, in which to keep the permanent record of the proceedings of this Board and any other necessary supplies. Carried.

On motion adjourned, to meet July 21, 1897.

<p>W. E. ROBINSON, <i>Secretary.</i></p>	<p>AMOS F. MOORE, <i>President.</i></p>
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EXECUTIVE COMMITTEE.

SPRINGFIELD, ILLINOIS, July 7, 1897.

The Executive Committee of the State Farmers' Institute met, pursuant to call. Present, Moore, Coolidge, Mann, Palmer and Bartlett.

Upon motion, the committee decided to recommend to the full Board that the next State Institute be held December 14-16, 1897.

Treasurer Thos W. Wilson presented his bond in the sum of \$15,000.00 and same, after due investigation, was approved and placed in the hands of President Moore.

Secretary instructed to call a meeting of the full Board at Springfield on August 4, 1897. Adjourned.

<p>W. E. ROBINSON, <i>Secretary.</i></p>	<p>AMOS F. MOORE, <i>Chairman.</i></p>
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SPRINGFIELD, ILLINOIS, August 4, 1897.

The Board of Directors met, pursuant to call. Roll call showed Directors Moore, Inglis, Davenport, Bartlett, Coolidge, Wilmarth, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer and Beal present.

In the absence of the Secretary, Mr. Thos. W. Wilson was made Secretary *pro tem*.

Communication from Charles J. Lindemann, relative to the appointment of members of the Board from the seven Congressional districts in Cook county, read, and on motion of Mr. Davenport, placed on file.

Director Dean moved the appointment of a committee of three to ask the opinion of the Attorney General regarding the appointment of directors from the seven districts in Cook county. The motion prevailing, Messrs. Davenport, Grout and Wilson were appointed as such committee.

On motion of Director Coolidge, adjournment was had until 1:30 p. m.

AFTERNOON SESSION.

The Board of Directors met at 1:30 p. m., as per adjournment.

Roll call showed same present as at morning session and Secretary Robinson.

The committee appointed to secure decision of Attorney General, made report as follows:

To the Directors of the Illinois Farmers' Institute Association:

Gentlemen:—Your committee appointed to secure the opinion of the Attorney General touching certain questions of construction of the act creating the Association, beg leave to report.

The Attorney General is absent from the city and Assistant Attorney General Hill gives his opinion, in substance, as follows:

1. The evident intent of the law is that there should be one director from each Congressional district in the State.

2. Though not expressly so stated in unequivocal terms, the intent is that every director should be a resident of the district he represents.

3. That the list of names on a certain communication to the directors, dated July 12, 1897, was not chosen in accordance with the provisions of the statute.

4. That a vacancy now exists in the directorship of the 1st, 2nd, 3rd, 4th, 5th, 6th and 7th Congressional districts and has existed since the passage of the act.

5. That the directors may proceed to fill any and all such vacancies, making the selection from within or without the list submitted, as they please, but that any one elected should be a resident of the Congressional district which he represents.

6. That at the regular time and in the regular manner the three delegates from Cook county are competent to elect one director for each Congressional district in said county.

Respectfully submitted,

EUGENE DAVENPORT,
A. P. GROUT,
OLIVER WILSON.

Said report received and placed on file.

Minutes of Executive Committee meeting of July 7, 1897, read and approved by the Board.

Moved by Davenport that the matter of fixing the date of the annual meeting be referred to the executive meeting with power to act. Motion laid upon the table.

It being then moved that the recommendation of the Executive Committee be adopted, a point of order was made that the whole matter was laid on the table. The point was well taken and the motion declared out of order.

Moved that the Board do not appoint directors to represent the seven Congressional districts in Cook county until the next regular annual meeting.

A motion was made as substitute, that those recommended by the delegates present from Chicago, namely, Chas. H. Dolton, 1st district, Johnathan Periam, 2nd district, Martin Conrad, 3rd district, F.

C. Rossiter, 4th district, E. G. Uihlein, 5th district, Wm. Stewart, 6th district, C. J. Lindeman, 7th district, be elected to represent their respective districts. Said substitute motion, being carried, the above named gentlemen were declared elected.

Treasurer Thos. W. Wilson reported verbally that \$7,500.00 was in his hands, subject to appropriation. On motion, D. W. Prindle, of Villa Ridge, was appointed to fill vacancy on the Board from 22nd district.

A motion prevailing that an informal ballot be taken for State Superintendent of Farmers' Institutes, the vote was so taken, and resulted as follows:

Judd 6, Wilson 5, Palmer 2 and Mills 2.

After a recess of twenty minutes, the Board proceeded to the formal election of Superintendent, with the following results:

	Judd.	Wilson.	Palmer.
First ballot.....	7	5	4
Second ballot.....	5	6	5
Third ballot.....	5	7	4
Fourth ballot.....	4	7	5
Fifth ballot.....	4	8	4
Sixth ballot.....	4	6	6
Seventh ballot.....	2	10	4

On motion, Oliver Wilson, of Magnolia, was made the unanimous choice of the Board for Superintendent.

Motion that committee of five be appointed to recommend to this Board, salaries for the Superintendent and other officers of the Board.

Substitute motion, that the salary of the Superintendent be fixed at \$100.00 per month and necessary expenses. Substitute amended to fix said salary at \$100.00 per month and expenses for eight months, beginning August 1, 1897.

On motion, whole matter was referred to a committee of two, consisting of Messrs. Dean and Davenport, appointed by the chair, to secure decision of the Attorney General as to legality of paying a salary to the Superintendent of Institutes.

Said committee, upon its return, reported the decision of the Attorney General to be, that under the law, as passed, no salary could be paid to any officer.

Whereupon the President declared all motions bearing upon the salary of Superintendent out of order.

On motion, adjourned until August 5, 1897, at 9 o'clock a. m.

SECOND DAY'S SESSION.

AUGUST 5, 1897.

The Board reconvened Thursday morning at 9 o'clock.

Roll call showed the following present: Inglis, Davenport, Dolton, Periam, Bartlett, Moore, Coolidge, Wilmarth, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer and Beal.

Moved that committee on compilation of report of State Institute be discharged and that they be requested to turn over to the Secretary all matter in their hands, and that he be instructed to secure the publication of such report on earliest possible date. On said motion Coolidge, Wilmarth, Grout, Sawyer and Periam voted "aye," and Inglis, Davenport, Bartlett, Moore, Mann, Wilson, Dean, Mills and Beal voted "nay," and the motion was declared lost.

A motion then prevailed that such committee be instructed to receive no material for such report after September 1, 1897.

Moved that each director be held responsible for having the reports from his district by September 1, 1897. Carried.

A motion that the matter contained in the State report be confined to papers produced before the State and County Institutes, was amended to except papers received from the Experiment Station at Champaign.

Amendment accepted and motion lost.

Moved that \$600.00, or so much of said amount as is necessary, be appropriated to pay committee for compiling and proof reading the State report.

Motion amended, changing the amount to \$400.00. Amendment lost. Original motion carried.

Moved that the Executive Committee be authorized and directed to have the annual report published at earliest possible moment, with power to take such steps as they think best, if the committee on compilation and publication do not use due diligence. Motion withdrawn.

Director Davenport moved that the rules of this Board be referred to a committee of three, to be appointed by the chair, for revision and addition, because of the election of a Superintendent. The motion was carried, and Messrs. Davenport, Inglis and Grout were appointed as such committee.

Moved by Director Coolidge that the Board now proceed to fix the place for next meeting of State Institute.

Upon said motion being declared carried, Director Wilmarth moved that the next annual meeting be held at Springfield. Amended by Director Mann, by substituting Champaign for Springfield. The amendment carried, after which a motion to refer the whole matter to a committee of five, to be appointed by the chair, to correspond with various cities with a view to selecting location for next annual meeting, was carried.

On motion, the matter of fixing the date of next annual meeting was referred to the same committee.

Adjourned to meet at 1:30 p. m.

AFTERNOON SESSION.

THURSDAY, August 5, 1897, 1:30 p. m.

Board met as per adjournment.

Roll call showed present Directors Moore, Dolton, Bartlett, Coolidge, Wilmarth, Mann, Palmer, Wilson, Dean, Mills, Sawyer and Beal.

Director Palmer, in behalf of the Finance Committee, made the following report:

We, the Finance Committee, beg leave to make the following report: That we have favorably considered and allowed the following bills, numbered and recommended as follows, and that orders be drawn on the Treasurer for the same, itemized statements of which have been filed with the Secretary:

No.	1	Edward F. Hartman.....	\$3 25
"	2	C. D. Bartlett.....	94 00
"	3	Oliver Wilson.....	12 78
"	5	Jonathan Periam.....	5 50
"	6	F. C. Mann.....	28 10
"	7	W. W. Kimball & Co.....	3 00
"	8	Illinois State Register.....	28 50
"	9	Illinois State Register.....	66 80
"	10	A. A. K. Sawyer.....	9 71
"	11	.....	.....
"	12	W. E. Robinson.....	1 25
"	13	W. E. Robinson.....	73 50
"	14	G. A. Willmarth.....	17 60
"	15	Oliver Wilson.....	12 78
"	16	F. M. Palmer.....	8 68
"	17	J. H. Coolidge.....	124 88
"	18	L. N. Beal.....	16 14
"	19	G. W. Dean.....	25 10
"	20	Chas. F. Mills.....	20 00
"	21	J. B. Brown.....	9 55
"	22	Eugene Davenport.....	10 35
"	23	C. J. Lindemann.....	5 03

On motion, report of committee approved and Secretary instructed to draw warrants for the several amounts.

By motion, it was ordered that no bill of expense of director incurred prior to last annual meeting be paid.

The bill of Frank S. Springer of \$15.00 for compiling index to last State report be referred back to committee.

Secretary ordered to draw warrant in favor of J. L. Pickering for \$3.00 in payment for his Legislative Directory, same to be charged to the library fund account.

President Moore appointed Directors Davenport, Dolton, Bartlett, Coolidge and Mills on committee to determine time and location of the next annual meeting.

A motion to defer action in regard to furnishing the office of the Board of Directors until the next meeting of the Board, was lost.

On motion, the President, Secretary, Treasurer and Superintendent were appointed as a committee and authorized to purchase furniture for the office, not to exceed the amount of \$300.00.

The Committee on Systematizing and Organizing County Institutes made report. Same was approved and placed on file. The Secretary was instructed to send a copy of said report to each Director of the Board and to each President and Secretary of the County Institutes.

REPORT OF THE COMMITTEE ON SYSTEMATIZING AND ORGANIZING COUNTY INSTITUTES.

That the directors of the various districts make an effort in their districts to have their County Institutes come in rotation so that a speaker from a distance can attend more than one County Institute on the same trip, thereby saving time and expense.

Also, that the directors who have unorganized counties in their districts make a special effort to organize those counties by visiting the counties and working up an interest and helping to hold the Institute if one can be arranged, and to call on the State Superintendent of Institutes for help if necessary.

Respectfully,

L. N. BEAL, *Chairman.*
CHARLES F. MILLS,
EUGENE DAVENPORT.

The Committee on Exhibit and Local Arrangements for the State Institute made the following report:

To the Illinois Farmers Institute:

Your standing Committee on Exhibits at the proposed show of agricultural products, etc., to be held in connection with the next annual meeting of the Illinois Farmers' Institute, recommend that an appropriation be made for premiums for said display amounting to \$525.00.

Further, that competition be invited from every County Board of Agriculture, County Farmers' Institute, to associations and to individuals of every county in the State.

That the display from each county be confined to products actually grown therein, but the party exhibiting is not required to be the producer.

That awards of prizes shall be based on the quality and variety of products shown in the several exhibits, and shall be made to the first, second and third best and largest displays from the counties forming the Northern, Central and Southern Grand Divisions, respectively, to-wit:

COUNTIES OF THE NORTHERN DIVISION.

Boone, Bureau, Carroll, Cook, DeKalb, DuPage, Grundy, Henderson, Henry, Iroquois, JoDaviess, Kane, Kankakee, Kendall, Knox, Lake, LaSalle, Lee, Livingston, Marshall, McHenry, Mercer, Ogle, Peoria, Putnam, Rock Island, Stark, Stephenson, Warren, Whiteside, Will, Winnebago, Woodford.

COUNTIES OF THE CENTRAL DIVISION.

Adams, Brown, Calhoun, Cass, Champaign, Christian, Clark, Coles, Cumberland, DeWitt, Douglas, Edgar, Ford, Fulton, Green, Hancock, Jersey, Logan, Macon, Macoupin, Mason, McDonough, McLean, Menard, Montgomery, Morgan, Moultrie, Piatt, Pike, Sangamon, Schuyler, Scott, Shelby, Tazewell, Vermilion.

COUNTIES OF THE SOUTHERN DIVISION.

Alexander, Bond, Clay, Clinton, Crawford, Edwards, Effingham, Fayette, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jasper, Jefferson, Johnson, Lawrence, Madison, Marion, Massac, Monroe, Perry, Pope, Pulaski, Randolph, Richland, Saline, St. Clair, Union, Wabash, Washington, Wayne, White, Williamson.

4. Each exhibit must include a representative collection of the cultivated products of the farm, orchard and garden.

5. Each sample be plainly and correctly labeled with common name, and with botanical name, if known to the exhibitor, and each exhibitor must, before an award is made, furnish to the superintendent of the department a full and correct printed or written catalogue of the samples composing his entire exhibit.

6. The enumeration of the varieties herein is intended as merely a suggestion, and not at all as a full list.

7. No exhibit which does not as a whole creditably represent the products of the soil in the county from which it is sent, shall be deemed worthy of any portion of the money offered for collective exhibits.

Every exhibit should be carefully and tastefully arranged and installed by the exhibitor or an authorized agent, as this feature will be taken into account by the judges.

9. Entries of county exhibits close at 6 o'clock p. m.

Exhibits must be on exhibition not later than _____, in order that they may be in place by the opening day of the fair.

PRIZES.

Best and largest display of farm products from any county in the Northern Grand Division of the State.....	\$100 00	\$50 00	\$25 00
Best and largest display of farm products from any county in the Central Grand Division of the State.....	100 00	50 00	25 00
Best and largest display of farm products from any county in the Southern Grand Division of the State.....	100 00	50 00	25 00

CHARLES F. MILLS,
L. N. BEAL,
G. W. DEAN,
A. F. MOORE.

Same was approved and ordered placed on file.

The special committee on revision on rules reported as follows:

BY-LAWS OF THE BOARD OF DIRECTORS OF THE ILLINOIS FARMERS' INSTITUTE.

1. The Board of Directors shall meet at the call of the President, or upon the written petition of five members, the Secretary shall call a meeting. In all cases the Secretary shall mail to each member notice of the call at least ten days before the meeting.

2. Nine members shall constitute a quorum for all business except the election of officers and amending the by-laws, for which a majority of all the membership shall constitute a quorum.

3. A motion shall prevail when it receives a majority of all the members present, but a motion to amend these by-laws shall receive a majority of the entire Board of Directors or it shall not prevail.

4. The President shall preside at all meetings of the directors; he shall appoint all committees, unless otherwise provided for, and he shall be chairman of the executive committee.

5. The Vice President shall perform the duties of the President in the absence of the officer.

6. The Secretary shall give notice of all meetings, as hereinbefore provided; he shall attend all meetings of the Board; keep true and accurate records of its proceedings and perform such other duties as may by the President or Executive Committee be required.

7. The Treasurer shall be custodian of the funds of the association upon filing with the Secretary a bond, approved by the Executive Committee.

8. The Treasurer shall pay out only by order of the Executive Committee warrants drawn by the Secretary of the Board of Directors and countersigned by the President.

9. The duties of the Superintendent of Institutes shall be as follows:

(a) To employ such speakers as are authorized by the Executive Committee.

(b) To establish an office with which County Institutes may advise as to speakers and to dates.

(c) To be alert and active in the betterment of the Farmers' Institutes of the State and to organize Institutes in the unorganized territory.

(d) To compile and edit the annual report, required by law.

(e) To be the Secretary of the Executive Committee and to perform such other duties as may from time to time be prescribed by the Directors or the Executive Committee.

10. The President shall appoint four directors, who, with himself, shall constitute the Executive Committee.

11. It shall be the duty of the Executive Committee to have general charge and control of the finances of the association, to perform all duties herein prescribed, and to have general control and management of the affairs of the Board of Directors, when the same is not in session; it shall, at such meeting of the Board, report the general condition and finances of the association and make such recommendations as it may think proper.

12. The deliberations of the Board of Directors and all committees shall be guided by Reed's Parliamentary Practice.

13. These by-laws may be amended at any meeting by a majority of all the members constituting the Board.

E. DAVENPORT,
A. P. GROUT.

The by-laws as above reported, in conjunction with rule 5 (after eliminating 1, Executive and Finance of section 1 and all of section 2) and rule 6, to be known as by-laws 14 and 15, were adopted as the by-laws of this Board.

On motion the Board adjourned.

W. E. ROBINSON,
Secretary.

AMOS F. MOORE,
President.

SPRINGFIELD, ILL., August 19, 1897.

Board of Directors called to order in pursuance with the following call:

W. E. Robinson, Secretary Illinois Farmers Institute:

SIR:—You are hereby requested and directed, in pursuance of the rules of the Board of Directors of the Illinois Farmers' Institute, to call a meeting of said Board and notify all members of same on or about August 19, 1897, 11 a. m., at our rooms, Springfield, Illinois.

Yours,

J. H. COOLIDGE,
Director 10th District.

A. A. K. SAWYER,
Director 18th District.

F. M. PALMER,
Director 13th District.

CHARLES H. DOLTON,
Director 1st District.

L. N. BEAL,
Director 20th District.

Roll call showed the following directors present: Davenport, Dolton, Periam, Rossiter, Lindemann, Bartlett, Moore, Coolidge, Willmarth, Mann, Palmer, Dean, Grout, Mills, Sawyer and Secretary Robinson.

Minutes of last meeting read and approved.

Director Dolton extended an invitation to the members and officers of the Board of Directors to visit the State Fair Ground. Said invitation accepted by motion for 3:30 p. m.

Director Willmarth moved that a committee of three be appointed to secure from the Attorney General a written opinion as to the right of this Board to pay the Superintendent of Institutes a salary. Motion prevailed and the chair appointed Directors Palmer, Willmarth and Davenport as such committee.

Upon motion of Director Dolton, the matter of fixing the Secretary's salary was referred to the Executive Committee for report.

Adjourned to 1:30 p. m.

AFTERNOON SESSION.

Upon the Board reconvening, it was ordered that the Superintendent of the State House be called upon to inform us as to the janitor work to be done in the office.

The committee appointed to secure the opinion of the Attorney General, reported as follows:

SPRINGFIELD, ILL., August 19, 1897.

Illinois Farmers' Institute, Springfield, Illinois:

GENTLEMEN:—In response to the question, this day submitted by your committee, I have examined the law making appropriations for the Illinois Farmers' Institute and County Farmers' Institutes, approved June 5, 1897, and am of the opinion that under section 4 of that act, it is competent for the Institutes in counties not now organized, and to assist in making the meetings of the County Institutes throughout the State of general interest and practical

benefit, and also to make it his duty, if you see fit so to do, to act as speaker at the State Institute, and to pay him for such services, either by day or otherwise, such compensation as you think would be reasonable, under the circumstances, for the services rendered; and that payment for such services may be made upon the order of the President, countersigned by the Secretary of the Institute, and approved by the Governor, as provided in section 3 of that act.

I remain, very respectfully,

E. C. AKIN,
Attorney General.

Upon motion report received and made a matter of record.

A motion was made that a committee of three be appointed to recommend a suitable compensation for the Superintendent of Institutes.

Substitute offered that said Superintendent be paid \$5.00 per diem for time occupied and necessary expenses.

Substitute offered that the Secretary of the Board be allowed \$5.00 per diem and necessary expenses.

On motion adjourned to meet at 5:30 p. m.

5:30 P. M.

The Board met after recess, as per adjournment.

Present: Messrs. Bartlett, Beal, Coolidge, Dolton, Davenport, Dean, Grout, Lindermann, Mann, Mills, Moore, Palmer, Perriam, Ros-siter, Sawyer and Willmarth.

The question pending before adjournment was the motion of Mr. Dean that the compensation of the Secretary be made \$5.00 per day and actual expenses for time actually expended and outlay of money in attending to the duties assigned him.

Mr. Bartlett moved, as a substitute for the motion of Mr. Dean, that the Secretary be allowed a salary of \$600.00 per year for the discharge of such duties as may be assigned him by the Board of Directors.

Mr. Bartlett asked consent, which was granted, to withdraw his substitute.

Mr. Palmer moved, as a substitute for the motion of Mr. Dean, that \$600.00, or so much thereof as may be determined by the Executive Committee, be appropriated for the annual compensation of the Secretary and such services of clerk and stenographer as may be deemed necessary by the Executive Committee. Substitute adopted.

Mr. Sawyer moved that \$25.00 be appropriated for use of each director, to cover the expenses incurred in the organization of County Institutes and other expenses incident to the discharge of the duties of his office.

Mr. Sawyer asked consent, which was granted, to withdraw his motion.

Motion of Mr. Palmer adopted, that the Executive Committee be authorized to audit the accounts of directors for expenses incurred in organizing County Farmers' Institutes in their respective districts.

Mr. Walter R. Kimzey, of Tamaroa, was nominated and elected a director for the 21st Congressional district, to fill the vacancy caused by the resignation of Mr. A. B. Ogle.

Mr. D. H. Shank, of Paris, was nominated and elected a director for the 19th Congressional district, to fill the vacancy caused by the resignation of Mr. W. H. Wallace.

Motion of Mr. Rossiter adopted, that only directors or persons employed by the Illinois Farmers' Institute in the discharge of their duties to this Board, be permitted to occupy for office purposes the rooms in the State House assigned to this Board.

Motion of Mr. Periam adopted, that the President inform the chief custodian of the State House of the employés of this Board entitled to keys to this office.

Mr. Willmarth moved that article 9, section E, be amended to read as follows: "To be Secretary of the Executive Committee and of this Association after the expiration of this year, and perform such other duties as may from time to time be prescribed by the directors or the Executive Committee." Amendment adopted.

Motion of Mr. Rossiter adopted, that the committee appointed to furnish the office of this Board be authorized to put the room in proper order and employ a janitor to keep the room in neat condition.

Mr. J. R. Goddard, of the Board of Live Stock Commissioners, advised the directors that his Board would like to furnish a speaker for all the County Institutes possible to advocate the importance of examining dairy cows for tuberculosis, and he requested a list of dates and places of holding County Institutes during the coming year.

Motion of Mr. Palmer adopted, that the Illinois Farmers' Institute approves the plan suggested by Mr. Goddard.

Motion of Mr. Beal adopted, that the Illinois Farmers' Institute extend a hearty vote of thanks to W. C. Garrard for invitation to visit and examine the grounds and buildings of the State Fair grounds.

Motion of Mr. Rossiter adopted, that the matter of compensation for Miss Trotter's services as stenographer and typewriter be referred to the Executive Committee with power to act.

Motion of Mr. Willmarth adopted, that it is the sense of this Board that Superintendent of Institutes of this Board establish headquarters on the State Fair grounds during the week of the coming State Fair, where the Institute workers of this State may meet for conference.

Mr. Willmarth moved that the directors of the Illinois Farmers' Institute hold a meeting of the Board in Springfield during the week of the State Fair. Lost.

On motion the Board adjourned.

W. E. ROBINSON,
Secretary.

AMOS F. MOORE,
President.

SPRINGFIELD, ILL., Sept. 29, 1897.

Board of Directors met pursuant to call of President Amos F. Moore.

Roll call showed the following present: Davenport, Goodrich, Dolton, Periam, Rossiter, Lindemann, Bartlett, Moore, Coolidge, Wilmarth, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer, Kimzey, Beal, Shank, Prindle, Treasurer Wilson and Secretary Robinson.

Secretary Robinson read a letter from Director Gurler appointing A. G. Judd, vice president of the State Dairymen's Association, as his proxy, to act in his absence.

On motion that Mr. Judd be allowed to act as said proxy, the roll was called and resulted as follows: Voting "aye," Dolton, Periam, Rossiter, Kimzey and Beal; voting "nay," Bartlett, Coolidge, Wilmarth, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer and Prindle.

The vote standing five ayes to ten nays was declared lost.

Upon motion it was ordered that no one be allowed to speak to exceed three minutes upon any question, unless by consent of the Board.

A motion prevailing that the committee on location of the next State Institute be called upon for report, the following report was read:

To the Illinois Farmers' Institute:

Your committee, to whom was referred the matter of fixing the time and place of holding the next annual meeting of the Illinois Farmers' Institute, begs leave to submit the following report:

The committee met at the St. Nicholas Hotel, Springfield, Ill., on the evening of August 19, 1897. and decided to fix the date for the next annual meeting for Tuesday, Wednesday and Thursday, February 22, 23 and 24, 1898, said date being same recommended by the delegates representing the county farmers in convention assembled at the close of the last State Institute meeting.

The chairman and secretary of the committee on location were instructed to invite proposals from the mayors of Illinois for the location of the next annual meeting. A copy of attached circular, marked "A," was sent to the mayors of the State, County Farmers' Institutes and the directors of the Illinois Farmers' Institute.

Applications for the next annual meeting for the Illinois Farmers' Institute have been filed with your committee by the mayors of the following named cities, which are attached and marked as noted:

- B. Champaign County Institute.
- C. Bloomington.
- D. Champaign.
- E. Dixon.
- F. Galesburg.
- G. Griggsville.
- H. Paris.
- I. Springfield.
- J. Urbana.

A majority of the committee represent districts that have filed applications for said location of the next annual meeting and favor the cities in their respective districts. The committee, therefore, begs leave to submit all the applications for said location to the entire Board without prejudice, and recommend that the choice of location be determined by ballot of the directors present at this meeting.

Respectfully submitted,

E. DAVENPORT,
C. D. BARTLETT,
J. H. COOLIDGE,
CHARLES H. DOLTON,
CHARLES F. MILLS.

Attached to said report were the several exhibits, marked from A to J, inclusive, and same have been filed.

Upon motion said report was accepted.

A motion prevailing that the representatives of each city desiring the location of the State Institute be given ten minutes in which to present their claims, the roll of cities was called, and response was made by the representatives present.

A motion was made and carried that the roll be called and that we proceed to vote upon the question of the location *viva voce*.

Whereupon the Secretary was ordered to call the roll, with the following result:

VOTE ON LOCATION.

	1st Ballot.	2d Ballot.	3d Ballot.
Davenport.....	Champaign.....	Champaign.....	Champaign.....
Goodrich.....	Champaign.....	Champaign.....	Champaign.....
Dolton.....	Paris.....	Paris.....	Dixon.....
Periam.....	Paris.....	Dixon.....	Dixon.....
Rossiter.....	Paris.....	Paris.....	Champaign.....
Lindemann.....	Dixon.....	Dixon.....	Dixon.....
Bartlett.....	Galesburg.....	Galesburg.....	Galesburg.....
Moore.....	Dixon.....	Dixon.....	Dixon.....
Coolidge.....	Galesburg.....	Galesburg.....	Galesburg.....
Willmarth.....	Galesburg.....	Galesburg.....	Galesburg.....
Mann.....	Champaign.....	Champaign.....	Champaign.....
Palmer.....	$\frac{1}{2}$ Champaign..... $\frac{1}{2}$ Bloomington.....	Bloomington.....	Bloomington.....
Wilson.....	Champaign.....	Galesburg.....	Galesburg.....
Dean.....	Galesburg.....	Galesburg.....	Galesburg.....
Grout.....	Griggsville.....	Champaign.....	Champaign.....
Mills.....	Springfield.....	Springfield.....	Springfield.....
Sawyer.....	Paris.....	Paris.....	Galesburg.....
Kimzey.....	Paris.....	Paris.....	Paris.....
Beal.....	Champaign.....	Champaign.....	Champaign.....
Shank.....	Paris.....	Paris.....	Paris.....
Prindle.....	Champaign.....	Champaign.....	Champaign.....

	4th Ballot.	5th Ballot.	6th Ballot.
Davenport.....	Champaign.....	Champaign.....	Champaign.....
Goodrich.....	Champaign.....	Champaign.....	Champaign.....
Dolton.....	Galesburg.....	Galesburg.....	Galesburg.....
Periam.....	Galesburg.....	Galesburg.....	Champaign.....
Rossiter.....	Champaign.....	Champaign.....	Champaign.....
Lindemann.....	Dixon.....	Champaign.....	Champaign.....
Bartlett.....	Galesburg.....	Galesburg.....	Galesburg.....
Moore.....	Dixon.....	Galesburg.....	Champaign.....

Vote on Location—Concluded.

	4th Ballot.	5th Ballot.	6th Ballot.
Coolidge.....	Galesburg	Galesburg	Galesburg
Willmarth.....	Galesburg	Galesburg	Springfield
Mann	Champaign.....	Champaign.....	Champaign.....
Palmer	Galesburg	Galesburg	Galesburg
Wilson	Galesburg	Galesburg	Galesburg
Dean.....	Galesburg	Galesburg	Springfield
Grout	Champaign.....	Champaign.....	Champaign.....
Mills.....	Springfield	Springfield	Springfield
Sawyer.....	Galesburg	Galesburg	Springfield
Kimzey.....	Paris.....	Springfield	Springfield
Beal	Champaign.....	Champaign.....	Champaign.....
Shank	Paris.....	Paris.....	Paris.....
Prindle.....	Champaign.....	Champaign.....	Champaign.....

Champaign having received a majority of the votes cast on the sixth ballot, was declared the choice of the Board for the location of the next State Institute.

Minutes of the last meeting read and approved.

The committee on furnishing the office of the Board made report and presented the following bills for carpet, furniture, etc., which were O. K.'d by the committee.

R. F. Kinsella, carpets, furniture, etc.....	\$67 00
Barkley & Lax, furniture.....	78 25
Edgar S. Barnes, typewriter.....	100 00

On motion said bills were allowed and the Secretary ordered to draw warrants in payment of same.

Mr. Rossiter read the following resolution and moved its adoption:

Resolved, That the Board of Directors of the Illinois State Farmers' Institute, now in session, approve the action of President A. F. Moore in the appointing of an Executive Committee, consisting of five members, including himself, viz.: Messrs. Dolton, Willmarth, Mann and Grout.

A motion was made and seconded to adjourn. Roll call being demanded, same was had, resulting as follows: Aye—Willmarth, Grout, Mills, 3. No—Davenport, Goodrich, Periam, Lindemann, Bartlett, Moore, Coolidge, Mann, Palmer, Wilson, Dean, Sawyer, Kimzey and Beal, 13; and the motion was declared lost.

The motion of Mr. Rossiter upon the adoption of his resolution being before the house, the previous question was moved and seconded.

Mr. Palmer made the point of order that he had the floor, since Mr. Wilmarth, who seconded the motion for the previous question, did not arise from his chair and secure the recognition of the President. President Moore ruled the point not well taken.

Upon the question, "Shall the main question be now put?" the roll was called and resulted in the following vote: Ayes—Davenport, Goodrich, Dolton, Periam, Rossiter, Lindemann, Moore, Willmarth,

Wilson, Dean, Grout, Mills, Sawyer, Beal and Shank, 15. Noes—Bartlett, Coolidge, Mann, Palmer, Kimzey, Prindle, 6; and the motion was declared carried.

The motion upon the adoption of the resolution being put, the roll was called, with the following result: Voting aye—Davenport, Goodrich, Dolton, Periam, Rossiter, Lindemann, Moore, Willmarth, Wilson, Dean, Grout, Mills, Sawyer, Beal and Shank, 15. Voting no—Bartlett, Coolidge, Mann, Palmer, Prindle and Kimzey, 6; and the motion was declared adopted.

Upon a motion to adjourn until September 30, 1897, at 8 o'clock p. m., the roll was called, with the following result: Voting aye—Davenport, Periam, Rossiter, Lindemann, Moore, Willmarth, Mills and Sawyer, 8. Voting no—Goodrich, Bartlett, Coolidge, Mann, Palmer, Wilson, Dean, Grout, Kimzey, Beal and Shank, 11; and the motion was declared lost.

Treasurer Thomas W. Wilson made a statement that the following bills had been allowed by the Executive Committee August 19, 1897, viz.:

W. E. Robinson, expense as Secretary.....	87 50
L. N. Beal, director.....	15 00
F. I. Mann, " ".....	8 70
C. D. Bartlett, " ".....	20 50
J. H. Coolidge, " ".....	10 15
A. A. K. Sawyer, " " Aug. 19.....	7 26
A. A. K. Sawyer, " " July 6.....	5 40
Jonathan Periam, " ".....	3 20
T. C. Rossiter, " ".....	14 55
G. A. Willmarth, " ".....	16 75
Chas. H. Dolton, " ".....	6 36
E. Davenport, " ".....	10 10
A. P. Grout, " " 4 meetings.....	35 00
C. J. Lindemann, " ".....	16 45

And the following bills had been allowed by said Executive Committee September 6, 1897, viz.:

C. D. Bartlett,	expense as director.....	\$4 00
F. I. Mann,	.....	6 88
J. H. Coolidge,	.....	13 00
F. M. Palmer,	2 meetings.....	16 28
Oliver Wilson,	Supt. of Institutes.....	9 00
T. W. Wilson,	Treasurer, postage, etc.....	34 65

Mr. Wilson further stated that warrants had been drawn in payment of same, but Secretary Robinson refused to sign same.

Secretary Robinson stated that he had refused to sign said warrants because of his belief that the Board of Directors had no legal right to delegate to any committee the authority to pay out money except when special appropriations were made for a specific purpose and placed in the hands of the committee with power to act.

The Board agreeing with the Secretary in his position, it was moved that the bills above read be allowed and the Secretary instructed to sign the warrants previously drawn.

Said motion carried and it was so ordered.

The following bills were read and on motion allowed and the Secretary instructed to draw warrants in payment of same:

Illinois State Register, printing and stamps.....	\$19 50
G. A. Willmarth, expense as director (organizer).....	11 50
E. S. Fursman, expense as speaker for Bond county.....	21 43
Bessie Trotter, stenographer	115 20
G. A. Willmarth, expense as director.....	12 00
C. J. Lindemann,	15 05
T. E. Goodrich,	12 00
A. A. K. Sawyer,	8 13
C. D. Bartlett,	10 30
L. N. Beal,	10 50
Jonathan Periam,	3 50
G. W. Dean,	7 10
G. W. Dean,	4 25
A. P. Grout,	5 30
F. I. Mann,	9 36
F. M. Palmer,	5 68
D. H. Shank,	6 36
J. H. Coolidge,	10 50
W. R. Kimzey,	11 14
W. E. Robinson,	9 00
Secretary.....	

On motion adjourned.

AMOS F. MOORE,
President.

W. E. ROBINSON,
Secretary.

SPRINGFIELD, ILL., Nov. 30, 1897.

Board called to order by President Amos F. Moore at 1:30 p. m.

Roll call showed the following present: Dolton, Periam, Rossiter, Linderman, Moore, Coolidge, Willmarth, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer, Shank and Kimzey. Record read and approved.

Director Sawyer introduced the following resolution and moved its adoption:

Resolved, That each director be allowed three dollars per day for hotel expenses from time he leaves home until he returns, with railroad fare included, in attending Board meetings."

A motion to lay said resolution on the table prevailing, it was so ordered.

Director Mann offered the following resolution and moved its adoption:

Resolved, That the sum of not to exceed \$20.00 be set aside for each county in the State for the payment of speakers, and the Executive Committee be authorized to draw warrants on the same.

Director Mills moved to amend by inserting after the word "State" the words "that hold an Institute according to law." Amendment carried.

The roll being called upon the original motion as amended, resulted as follows: Voting aye—Dolton, Periam, Rossiter, Linde-

mann, Moore, Mann, Wilson, Dean, Grout, Mills, Sawyer, Shank and Kimzey, 13; and nay—Palmer, 1; and the motion was declared carried.

A motion that unpaid claims for expense of Institutes held in Menard and other counties in 1897, prior to July 1, 1897, be allowed and warrants be drawn in payment of same, prevailed by *viva voce* vote.

Motion that it be considered that the Institute year extend from July 1st to July 1st. Carried.

Director Willmarth introduced the following resolution and moved its adoption:

Resolved, that the sum of \$1,000.00, or so much thereof as may be needed, be set apart to pay expenses of the directors in attending the County Institutes, that they may attend in their respective districts, and the Executive Committee be authorized to draw warrants on the Treasurer for the payment of the same.

The following substitute was offered for same:

Resolved, That the sum of not to exceed \$15.00 be set aside for each county in the State that holds an Institute according to law for the payment of expense of district directors in attending County Institutes in their districts and that the Executive Committee be authorized to draw warrants on the same.

Said substitute lost by *viva voce* vote.

Director Palmer then offered the following substitute for the original resolution:

Resolved, That the Executive Committee is authorized and directed to audit and pay the expense of directors in visiting and assisting County Institutes in their districts, and whatever money is necessary is appropriated for that purpose from the general fund.

The roll being called upon such substitute, resulted as follows: Voting aye—Willmarth and Palmer, 2; voting nay—Dolton, Periam, Rossiter, Lindemann, Moore, Mann, Dean, Grout, Mills, Sawyer, Shank and Kimzey, 12; and the substitute was declared lost.

The question recurring upon the original resolution, the roll was called with the following result: Voting aye—Willmarth, 1; voting nay—Dolton, Periam, Rossiter, Lindemann, Moore, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer, Shank and Kimzey, 14; and the resolution was declared lost.

Director Mills offered the following resolution and moved its adoption:

Resolved, That \$500.00, or so much thereof as may be needed, be and is hereby appropriated for expenses of directors incurred in attending County Institutes in their respective districts, and that the Executive Committee be authorized to approve itemized bills for said expenses and order warrants drawn.

The roll being called upon the question of the adoption of said resolution, resulted as follows: Voting aye—Dolton, Periam, Rossiter, Lindemann, Moore, Wilmarth, Wilson, Dean, Grout, Mills, Sawyer, Shank and Kimzey, 13; and voting nay—Mann and Palmer, and the motion was declared carried.

Director Mann offered the following resolution and moved its adoption:

Resolved, That the sum of \$800.00, or so much thereof as may be needed, be set apart to pay the expenses in Superintendent's office and the Executive Committee be authorized to draw warrants on same, as heretofore provided by this Board.

The motion being put to a vote, was declared carried.

Upon motion the Board adjourned to meet at the Staley Hotel at 8 o'clock p. m.

EVENING SESSION.

The Board convened as per adjournment.

Roll call showed the following present: Dolton, Periam, Rossiter, Lindemann, Moore, Willmarth, Mann, Palmer, Wilson, Dean, Grout, Mills, Sawyer, Shank, Kimzey and Davenport.

The Executive Committee reported the examination of the following bills and recommended that warrants be drawn in payment of same:

expense	\$18 34
expense and salary	48 00
expense	27 57
.....	25 26
.....	39 00
.....	19 28
.....	11 82
.....	16 80
.....	18 65
.....	5 00
.....	11 57
.....	12 38
.....	11 60
.....	7 25
.....	23 70
.....	28 40
expenses as Superintendent, \$107.43	427 43

A motion prevailed allowing said bills and ordering the Secretary to draw warrants in payment of same.

The bill of W. E. Robinson of \$165.00 for services as Secretary to date, was read and a motion to allow same was lost by the casting vote of the chair.

The following motion by Willmarth was adopted: That the Superintendent of Institutes be instructed to do no more work out of his office except when called upon so to do by a director, and expense so incurred be paid out of the \$20.00 appropriated for each county.

Jonathan Periam tendered his resignation as director of the Board. A motion was made to accept same, whereupon a motion was made to postpone action upon such motion until the next meeting of the Board.

The motion to postpone prevailing, it was so ordered.

Upon motion it was ordered that this Board pay Phillips Bros. \$50.00 for inserting cuts in the annual report.

Upon motion, the motion setting apart \$525.00 for premiums for exhibits at State Institute was reconsidered.

The original motion coming up for consideration, was laid upon the table.

Upon motion, it was ordered that the correspondence for each district be carried on by their respective directors.

Upon motion, it was ordered that \$500.00 be set aside from the general fund for expense of State Institute.

Adjourned to the call of the President.

AMOS F. MOORE,
President.

W. E. ROBINSON,
Secretary.

MINUTES OF MEETINGS OF THE BOARD OF DIRECTORS, ILLINOIS FARMERS' INSTITUTE.

STATE HOUSE, SPRINGFIELD, March 1, 1898.

TUESDAY, 10 O'CLOCK A. M.

The Directors of the Illinois Farmers' Institute met pursuant to the following call of the President:

POLO, ILL., Feb, 25, 1898.

DEAR SIR:—There will be a meeting of the Board of Directors of the Illinois Farmers' Institute in the office of said organization, in the Capitol building, Springfield, Tuesday, March 1, 1898, at 10:30 o'clock a. m., for the election of officers and the transaction of such business as may properly be considered.

Yours very truly,

AMOS F. MOORE,

President Illinois Farmers' Institute.

Called to order by President Moore.

The following directors responded to the call of the roll, viz.: Bartlett, Beal, Coolidge, Davenport, Dean, Dolton, Dunlap, Grout, Kimzey, Lindemann, Mills, Moore, Palmer, Periam, Rossiter, Sawyer, Shank, Wilmarth and Wilson.

Absent: Conrad, Ginler, Inglis, Mann, Pearce, Rundle, Stewart and Uhlein.

The President stated that the act of the General Assembly creating the Illinois Farmers' Institute provided that the new Board of Directors shall enter upon their duties the next Tuesday after their election, and inasmuch as March 1, 1898, is the proper date for the meeting of the new board, the old board had been convened to close up its business, and the new board had been called to assume the duties of office.

The minutes of the previous meeting were read and approved.

Under the head of unfinished business the resignation of Mr. Periam was made the special order, action on the same having been postponed at previous meeting.

Motion of Mr. Wilmarth adopted that resignation of Mr. Periam be not accepted.

Secretary W. E. Robinson read the following report:

List of Warrants drawn upon Treasurer Illinois Farmers' Institute, by W. E. Robinson.

No.	Name.	Office Expense, etc.	Library Fund.	Clerk Hire	General Fund.
1	Carrie Bull			\$50 00	
2	C. D. Bartlett				\$94 00
3	Oliver Wilson				25 56
4	C. H. Dalton				5 50
5	Jonathan Periam				4 60
6	F. I. Mann				28 10
7	W. W. Kimball & Co.				3 00
8	Illinois State Register				28 50
9	Illinois State Register				66 80
10	A. A. K. Sawyer				9 71
11	W. E. Robinson	\$1 25			
12	W. E. Robinson				73 50
13	G. A. Wilmarth				17 60
14	F. M. Palmer				8 68
15	J. H. Coolidge				124 88
16	L. N. Beal				16 14
17	G. W. Dean				25 10
18	Chas. F. Mills	20 00			
19	J. B. Brown	9 55			
20	E. Davenport				10 35
21	C. J. Lindemann				5 30
22	J. L. Pickering		\$3 00		
23	Ed. F. Hartman	3 25			
24	W. E. Robinson				7 50
25	L. N. Beal				15 00
26	F. I. Mann				8 70
27	C. D. Bartlett				20 50
28	J. H. Coolidge				10 15
29	A. A. K. Sawyer				7 26
30	A. A. K. Sawyer				5 40
31	Jonathan Periam				3 20
32	F. C. Rossiter				14 55
33	G. A. Wilmarth				16 75
34	Chas. H. Dolton				6 36
35	E. Davenport				10 10
36	A. P. Grout				35 00
37	C. J. Lindemann				16 45
38	C. D. Bartlett				4 00
39	F. I. Mann				6 88
40	J. H. Coolidge				13 00
41	F. M. Palmer				16 28
42	Oliver Wilson				9 00
43	T. W. Wilson	18 40			16 25
44	Illinois State Register	12 50			7 00
45	G. A. Wilmarth				11 50
46	E. S. Fursman				21 43
47	Bessie Trotter			115 20	
48	G. A. Wilmarth				12 00
49	C. J. Lindemann				15 05
50	T. E. Goodrich				12 00
51	A. A. K. Sawyer				8 13
52	C. D. Bartlett				10 30
53	L. N. Beal				10 50
54	Jonathan Periam				3 50
55	G. W. Dean				7 10
56	G. W. Dean				4 25
57	A. P. Grout				5 30
58	F. I. Mann				9 36
59	F. M. Palmer				5 68
60	D. H. Shank				6 36
61	J. H. Coolidge				10 50
62	W. R. Kimzey				11 14
63	W. E. Robinson				9 00
64	R. F. Kinsella	67 00			
65	Barkley & Lax	78 25			
66	Edgar S. Barnes	100 00			
67	W. E. Robinson			110 00	
68	W. R. Kimzey				18 34
69	W. E. Robinson			40 00	8 00
70	G. W. Dean				27 57
71	J. H. Coolidge				25 26

No.	Name.	Office Expense, etc.	Library Fund.	Clerk Hire	General Fund.
72	G. A. Wilmarth.....	.....	.....	.....	\$39 00
73	Oliver Wilson .....	.....	.....	.....	10 28
74	L. N. Beal.....	.....	.....	.....	11 82
75	C. J. Lindemann.....	.....	.....	.....	16 80
76	E. Davenport.....	.....	.....	.....	13 60
77	Jonathan Periam.....	.....	.....	.....	5 00
78	D. H. Shank .....	.....	.....	.....	11 57
79	A. A. K. Sawyer.....	.....	.....	.....	12 38
80	F. C. Rossiter.....	.....	.....	.....	11 60
81	Chas. H. Dolton .....	.....	.....	.....	7 25
82	A. P. Grout .....	.....	.....	.....	23 70
83	F. I. Mann .....	.....	.....	.....	28 40
84	Oliver Wilson .....	.....	.....	.....	427 43
85	E. S. Fursman.....	.....	.....	.....	19 18
86	H. L. Doan, Sec.....	.....	.....	.....	17 30
87	E. C. Richards, Sec.....	.....	.....	.....	20 00
88	C. Lamp, Treas.....	.....	.....	.....	20 00
89	George Hanlon, Sec.....	.....	.....	.....	20 00
90	E. B. Lyon, Sec.....	.....	.....	.....	17 83
91	Joseph Combe, Sec.....	.....	.....	.....	14 00
92	G. A. Wilmarth.....	.....	.....	.....	21 50
93	D. W. Prindle .....	.....	.....	.....	15 57
94	J. H. Coolidge.....	.....	.....	.....	11 08
97	Charles F. Mills.....	.....	.....	\$300 00	.....
		\$310 20	\$3 00	\$615 20	\$1,844 21
Grand total.....		.....	.....	.....	\$2,772 61

I hereby certify the above is correct.

W. E. ROBINSON,
Secretary.

March 1, 1898.

Treasurer T. W. Wilson read the following report:

TREASURER'S REPORT.

*Thos. W. Wilson, Treasurer, in Account with the Illinois Farmers' Institute
March 1, 1898.*

July 1, 1897 to March 1, 1898	<i>Dr.</i> To amount received from State Treasurer on account appropriation to Illinois Farmers' Institute..... To amount received from State Treasurer on account of County Farmers' Institutes	\$7,500 00 1,812 70	\$9,312 70
<i>Cr.</i> By amount paid as Treasurer of Illinois Farm- ers' Institute as per list of warrants attached marked Exhibit A		\$2,808 61	9,312 70
By amount paid to treasurers of County Farm- ers' Institute as per list of warrants attached marked Exhibit B		1,812 70	
By balance in treasury subject to order of Board of Directors.....		4,691 39	

T. W. WILSON,
Treasurer.

EXHIBIT A.

Warrants Paid by Treasurer of Illinois Farmers' Institute.

No. of warrant.	To whom drawn.	General fund.	Editing report, etc.	Office expenses.	Library.
1			\$50 00		
2		\$94 00			
3		25 58			
4		5 50			
5		4 60			
6		28 10			
7	I Co	3 00			
8		28 50			
9		66 80			
10	Dr.	9 71			
11	n			\$1 25	
12	n	73 50			
13	l	17 60			
14		6 68			
15		124 88			
16		16 14			
17		25 10			
18				20 00	
19				9 55	
20		10 35			
21	l	5 30			
22					\$3 00
23				\$ 25	
24	a	7 50			
25		15 00			
26		6 70			
27		20 50			
28		10 15			
29	Dr.	7 26			
30	Dr.	6 40			
31		3 20			
32		14 55			
33	l	16 75			
34		6 36			
35		10 10			
36		35 00			
37		16 45			
38		4 00			
39		6 88			
40		18 00			
41		16 28			
42		9 00			
43		16 25		18 40	
44				19 50	
45		11 50			
46		21 43			
47			115 20		
48		12 00			
49		15 05			
50		12 00			
51	r	8 18			
52		10 30			
53		10 50			
54		3 50			
55		7 10			
56		4 25			
57		5 30			
58		9 36			
59		5 68			
60		6 36			
61		10 50			
62		11 14			
63		9 00			
64				67 09	
65				78 25	
66				100 00	
67			110 00		
68		18 34			
69		8 00			
70		27 57			
71		25 26			
72		39 00			
73		10 26			
74		11 82			
75	n	16 80			

No. of warrant.	To whom drawn.	General fund.	Editing report, etc.	Office expenses.	Library.
76	E. Davenport.....	\$13 60	.....	.....	.....
77	J. Periam	5 00	.....	.....	.....
78	D. H. Shank	11 57	.....	.....	.....
79	A. A. K. Sawyer.....	12 38	.....	.....	.....
80	F. C. Rossiter.....	11 60	.....	.....	.....
81	C. H. Dolton	7 25	.....	.....	.....
82	A. P. Grout	23 70	.....	.....	.....
83	F. I. Mann	28 40	.....	.....	.....
84	Oliver Wilson	427 43	.....	.....	.....
85	E. S. Fursman.....	19 18	.....	.....	.....
86	H. L. Dona.....	17 30	.....	.....	.....
87	E. C. Richards.....	20 00	.....	.....	.....
88	C. Lamp.....	20 00	.....	.....	.....
89	Geo. Hanlon	20 00	.....	.....	.....
90	E. B. Lyon.....	17 83	.....	.....	.....
91	Joseph Combs	14 00	.....	.....	.....
92	G. A. Wilmarth.....	21 50	.....	.....	.....
93	D. W. Prindle.....	15 57	.....	.....	.....
94	J. H. Coolidge	11 08	.....	.....	.....
97	C. F. Mills .....	.....	\$300 00	.....	.....
98	Bessie Trotter.....	.....	36 00	.....	.....
Total		\$1,837 21	\$651 20	\$317 20	\$3 00
					\$2,808 61

EXHIBIT B.

Warrants Drawn in Favor of County Farmers' Institutes.

No. of warrant.	Name of Treasurer.	Postoffice.	County.	Amount.
1	I. H. Denny.....	Sorento	Bond.....	\$50 00
2	John R. Purey.....	Mt. Vernon.....	Jefferson	50 00
3	A. B. McDaniel.....	Fairfield	Wayne.....	26 60
4	E. B. Keneitt.....	Mt. Carmel.....	Wabash.....	50 00
5	L. S. Dorsey.....	Moro	Madison	50 00
6	Charles French	Chapin	Morgan	50 00
7	C. Lamp	Lanark	Carroll.....	50 00
8	Z. R. Genung.....	Rantoul.....	Champaign.....	50 00
9	A. F. Schoch.....	Ottawa	LaSalle	50 00
10	J. P. Jones.....	Charleston	Coles.....	50 00
11	Jos. Skeavington	Albion	Edwards.....	43 70
12	M. W. Greer	Rushville.....	Schuyler.....	28 35
13	Chas. H. Lamar.....	Hardin	Calhoun	50 00
14	Willam Webb	Good Hope	McDonough	50 00
15	Jacob F. Bergin	Petersburg	Menard	50 00
16	W. A. Peeples	Shawneetown	Gallatin.....	50 00
17	Wiley Fowler.....	Danville	Vermilion	50 00
18	Mrs. D. L. Harpham	Havana	Mason	49 13
19	H. M. Sisson	Galesburg	Knox.....	50 00
20	A. A. K. Sawyer.....	Hillsboro	Montgomery	50 00
21	C. S. Brydia	Fairbury.....	Livingston	50 00
22	Elmer Quinn	Henry.....	Marshall.....	50 00
23	John Burkey	Arcola	Douglas	44 07
24	Levi Christman.....	Plattville	Kendall.....	7 50
25	John D. Trimble	Trimble	Crawford	24 65
26	Joseph Lutz.....	Marshall.....	Clark	50 00
27	L. O. Johns.....	Moline	Rock Island	50 00
28	Fred. J. Johnson.....	Paxton.....	Ford	50 00
29	J. G. Haverfield.....	Joy.....	Mercer.....	50 00
30	H. C. Center.....	Watseka	Iroquois	50 00
31	F. J. Stoughton	Osco	Henry	50 00
32	R. A. Bloomfield	Mt. Sterling.....	Brown	18 10
33	Geo. W. Collins	Rockford	Winnebago	50 00
34	John Taylor	Winchester.....	Scott.....	50 00
35	C. W. Blackburn	Lincoln	Logan.....	48 00

No. of warrant.	Name of Treasurer.	Postoffice.	County.	Amount.
36	J. P. Ownby.....	Cerro Gordo.....	Piatt.....	\$50 00
37	A. R. McDaniel.....	Fairfield.....	Wayne.....	23 25
38	Eugene Raymond.....	Dixon.....	Lee.....	50 00
39	E. A. Washburn.....	Princeton.....	Bureau.....	50 00
40	W. B. Mills.....	Mt. Palatine.....	Putnam.....	49 25
	Total .....	.....	.....	\$1,812 70

Motion of Mr. Dunlap adopted that the President appoint a committee of three to examine and audit the reports of the Secretary and Treasurer.

The Chair appointed as said committee Messrs. Dunlap, Mills and Dean.

The Executive Committee made the following report, recommending payment of bills, which report, upon motion, was adopted, viz.:

To the Board of Directors, Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment for said vouchers be drawn to the order of the respective claimants, for the following amounts, viz.:

SPEAKERS COUNTY INSTITUTES.

Treasurer,	Boone County Institute, care	C. E. Chena	\$15 00
..	Bureau ..	L. R. Bryant.....	11 46
..	Bureau ..	L. R. Bryant.....	8 16
..	Christian ..	G. G. Large	14 00
..	DeKalb ..	.....	1 58
..	DeWitt ..	care S. E. Newell.....	20 00
..	DuPage ..	C. D. Bartlett	20 00
..	Henry ..	A. W. Hunter	20 00
..	Iroquois ..	H. C. Center.....	20 00
..	Jersey ..	J. W. Becker	20 00
..	Kendall ..	R. A. McClelland.....	18 50
..	Lee ..	R. E. Swigert.....	20 00
..	Livingston ..	C. R. Tombaugh	20 00
..	Marion ..	W. C. McClelland.....	20 00
..	McHenry ..	M. Zimpleman.....	20 00
..	Menard ..	H. A. Wood	19 69
..	Ogle ..	Chas. Walkup	20 00
..	Perry ..	W. T. White	20 00
..	Piatt ..	J. P. Ownby.....	20 00
..	Pike ..	C. G. Winn.....	20 00
..	Putnam ..	W. B. Mills.....	15 00
..	Randolph ..	S. S. Taylor	20 00
..	St. Clair ..	Miss Laura Patterson.....	10 25
..	Washington ..	M. Merker	20 00
..	Winnebago ..	A. E. Cutler	19 93

STATE INSTITUTE EXPENSES.

109	Amos. F. Moore, postage on programs	\$50 00
119	Gov. J. A. Mount, speaker State Institute.....	5 00
120	F. M. Higgins, singer State Institute	10 00
121	Mrs. N. S. Kedzie, speaker State Institute.....	6 80
122	Dr. C. C. Mills, speaker State Institute	4 30
123	Illinois State Register, programs State Institute	161 55
124	Mrs. H. F. Carriel, speaker State Institute.....	6 24
125	Fred H. Rankin, speaker State Institute.....	7 25
128	Annie Springer, addressing, wrapping programs, etc	7 50
130	Geo. E. McKerrow, speaker State Institute.....	3 25
134	Hotel Beardsley, board speakers.....	47 50

140	Champaign Gazette, printing.....	83 50
144	Mrs. L. G. Chapman, speaker State Institute.....	10 91
153	A. C. Rice, speaker State Institute.....	4 70
157	Geo. A. Gordon, speaker State Institute.....	4 47
159	Alvin C. Beal, speaker State Institute.....	11 70
160	James A. Stone, speaker State Institute.....	4 38
SERVICES.		
101	Oliver Wilson, Superintendent.....	160 23
102	.....	68 99
103	.....	25 95
145	W. E. Robinson, Secretary.....	172 00
137	expenses.....	7 00
MISCELLANEOUS.		
114	Illinois State Register, electros for annual report.....	52 30
127	Phillips Bros., expenses electros in annual report.....	50 00
138	W. W. Lewis, printing, etc.....	8 75

EXPENSES OF DIRECTORS.

C. D. Bartlett.....		\$18 00
L. N. Beal.....	\$12 82	
.....	39 84	
.....	16 20	
J. H. Coolidge.....	\$17 07	68 86
.....	29 58	
G. W. Dean.....		46 65
Charles H. Dolton.....	\$7 10	42 38
.....	14 05	
H. M. Dunlap.....		21 15
A. P. Grout.....	\$23 07	5 50
.....	25 15	
Walter R. Kimsey.....	\$29 84	48 22
.....	28 65	
S. Noble King.....		58 49
C. J. Lindemann.....	\$17 65	5 25
.....	14 30	
Amos F. Moore.....	\$106 22	31 95
.....	27 45	
.....	18 54	
F. M. Palmer.....		152 21
Jonathan Periam.....		28 14
F. C. Rossiter.....		19 25
A. A. K. Sawyer.....	\$18 36	22 00
.....	17 76	
D. H. Shank.....	\$46 68	36 12
.....	3 82	
Miss Sarah Steenburg.....		50 50
G. A. Willmarth.....	\$42 10	19 50
.....	14 30	
		56 40

Respectfully submitted,

AMOS F. MOORE,
CHARLES H. DOLTON,
A. P. GROUT.

Motion of Mr. Bartlett adopted that the Chair appoint a committee of three to examine and report upon the credentials of the recently elected directors.

The chair appointed as said committee Messrs. Bartlett, Beal and Sawyer.

Mr. Dunlap asked that the committee appointed to examine the financial statements of the Secretary be granted further time and be permitted to report to the new board, which request was granted.

Motion of Mr. Dunlap adopted that the old board adjourn and that the new board be convened at 1:30 p. m.

AFTERNOON SESSION.

The new board met at 1:30 o'clock p. m., called to order by President Moore.

The roll call showed hold over members present as follows: *Ex-officio*, Davenport and Dunlap; elective, Periam, Rossiter, Bartlett, Coolidge, Wilson, Grout, Sawyer, Beal; newly elected, Dolton, Steenberg, Lindemann, Moore, Wilmarth, King, Dean, Mills, Shank and Kimsey. Absent: *Ex-officio*, Inglis, Pearce, Gurler; elective, Uhlein and Prindle.

The committee appointed to examine and report upon the credentials of the newly elected directors made the following report which was adopted:

To the Illinois Farmers' Institute:

We your committee, to whom was referred credentials of the recently elected directors, do beg leave to report that we have examined the certificates of election and find them correct and that the following have been duly elected directors for the ensuing two years, viz.:

1st District.....	C. H. Dolton.....	Dolton, Ill.....
3d ".....	Mrs. Sarah Steenburg.....	Chicago, Ill.....
5th ".....	E. G. Uhlein.....	Chicago, Ill.....
7th ".....	C. J. Lindemann.....	Chicago, Ill.....
9th ".....	A. F. Moore.....	Polo, Ill.....
11th ".....	G. A. Wilmarth.....	Seneca, Ill.....
13th ".....	S. N. King.....	Bloomington, Ill.....
15th ".....	G. W. Dean.....	Adams, Ill.....
17th ".....	C. F. Mills.....	Springfield, Ill.....
19th ".....	D. H. Shank.....	Paris, Ill.....
21st ".....	W. R. Kimzey.....	Tamara, Ill.....

Respectfully submitted,

A. A. K. SAWYER,
C. D. BARTLETT,
L. N. BEAL.

The roll of the new board was then called and the following responded as present, viz.: Bartlett, Beal, Coolidge, Davenport, Dean, Dolton, Dunlap, Grout, Kimzey, King, Lindemann, Mills, Moore, Periam, Rossiter, Sawyer, Shank, Steenberg, Wilmarth and Wilson.

Absent: Gurler, Inglis, Mann, Pearce, Prindle, Stewart and Uhlein.

Motion adopted that the board proceed to the election of officers for the ensuing year.

Motion adopted that officers be nominated and elected by ballot and that the first ballot be informal.

The ballot for President resulted as follows:

	First ballot.	Second ballot.	Third ballot.
Dean.....	1	2	.....
Grout.....	3	1	.....
Moore.....	8	8	11
Sawyer.....	1	.....	.....
Wilmarth.....	7	9	9
Periam.....	.....	.....	.....
Total.....	20	20	20

Motion adopted, that the election of Mr. Moore be made unanimous and he was declared duly elected as President for the ensuing year.

The Board then proceeded to the nomination and election by ballot for a Vice-President, which resulted as follows:

NAME.	BALLOT.				
	Informal	First.	Second.	Third.	Fourth.
Beal.....	4	3	1	.....	.....
Coolidge.....	2	.....	.....	.....	.....
Dean.....	2	2	4	3	1
Grout.....	4	4	4	5	6
Sawyer.....	.....	1	.....	.....	.....
Shank.....	1	.....	.....	.....	.....
Steenberg.....	.....	.....	1	3	2
Wilmarth.....	7	10	10	9	11
Total.....	20	20	20	20	20

Motion adopted, that the election of Mr. Wilmarth be made unanimous, and he was declared duly elected as Vice-President for the ensuing year.

Motion adopted, that the same person be elected to fill the position of Secretary and Superintendent.

Motion adopted, that the further election of officers be postponed until compensation for services is paid.

Mr. Grout introduced the following resolution, which was adopted:

Resolved, That a committee of five Directors be appointed by the chair for the purpose of revising the by-laws of this organization, designating the duties and compensation of its officers, and such necessary plans as may be deemed advisable for the government of this body and the prosecution of the institute work of the State, and report at the next meeting of the Board.

Motion adopted, that the Board proceed with the election of officers.

The Board then proceeded to the nomination and election by ballot for a Secretary, which resulted as follows:

NAME.	BALLOT.							
	Informal	1	2	3	4	5	6	7
Hostetter	3	4	1	1	1	.....	.....	.....
Lindeman	5	3	4	4	4	6	4	3
Mills	7	9	10	10	9	8	10	11
Robinson	2	.....	.....	.....	.....	.....	.....	.....
Wilson, Oliver	3	3	5	5	6	6	6	6
Blank .....	.....	1	.....	.....	.....	.....	.....	.....
Total	20	20	20	20	20	20	20	20

Motion adopted, that the election of Mr. Mills be made unanimous, and he was declared duly elected as Secretary for the ensuing year.

Mr. Mills was then inducted into office and assumed the duties of Secretary.

The Board then proceeded to the nomination and election by ballot for a Treasurer, which resulted as follows:

NAME.	BALLOT.		
	Informal	First.	Second.
Dolton	1	.....	.....
Grout	4	4	1
King	3	5	5
Wilson, T. W.	10	10	11
Wilson, Oliver	1	1	1
Wilson	1	.....	.....
Mills, T. W. ....	.....	.....	1
Total	20	20	19

Motion of Mr. Wilmarth adopted, that the election of Mr. T. W. Wilson be made unanimous, and he was declared duly elected as Treasurer for the ensuing year.

Motion of Mr. Dunlap adopted, that the President be directed to cast the vote of all present for Charles F. Mills for Superintendent of Institutes for the ensuing year.

President Moore then cast the ballot of all present for Mr. Mills and he was declared duly elected Superintendent of Institutes for the ensuing year.

Motion of Mr. Dunlap adopted that \$50.00, or so much thereof as may be necessary, be and is hereby appropriated to pay for rent of hall for a Farmers Institute meeting to be held in the Third Congressional District in 1898.

Motion of Mr. Dunlap adopted that all pending claims be referred to the Executive Committee to be appointed by the President.

President Moore asked consent, which was granted, to allow the present members of the Executive Committee who had this day partially approved unsettled bills to act upon pending claims.

On motion adjourned to 7:30 o'clock this p. m.

EVENING SESSION—7:30 O'CLOCK P. M.

The Board of Directors met as per adjournment.

Called to order by President Moore.

Members responded present as follows: Bartlett, Beal, Coolidge, Dean, Dalton, Dunlap, Grout, Kimsey, King, Lindemann, Mills, Moore, Periam, Rossiter, Sawyer, Shank, Steenberg, Wilmarth and Wilson.

Motion of Mr. Coolidge adopted that the Secretary be instructed to proceed with the compilation of the copy for the 1898 annual report of the Illinois Farmers' Institute to the end that the same may be printed at the earliest possible date and that all copy for said report be completed and placed in the hands of the State Printer by May 1, 1898, and that all matter not filed with the Secretary by April 15, 1898, be omitted, and that no portraits be printed in the report.

President Moore called Vice President Wilmarth to the chair.

Mr. Moore moved that the portion of Mr. Coolidge's motion excluding portraits from the forthcoming annual report be reconsidered.

Mr. Dunlap moved as a substitute for the motion of Mr. Moore that the matter of publishing portraits in the annual report be referred to the Executive Committee with power to act. The substitute was adopted.

The Executive Committee presented a claim of Mr. W. E. Robinson, ex-Secretary, for \$338.00 without recommendation.

SPRINGFIELD, ILL., March 1, 1898.

Illinois Farmers' Institute to W. E. Robinson, Dr.

Salary to date.....	\$295 00
To postage for one year	25 00
To rent typewriter.....	8 00
To stenographer	10 00
	<hr/>
	\$338 00

Motion of Mr. Dunlap adopted that the bill of Mr. Robinson be referred back to said gentleman for an itemized statement as to time and nature of service, etc., covered by the claim of \$338.00.

The Executive Committee presented a claim of Mr. F. M. Palmer, of Clinton, Ill., for \$322.00 without recommendation.

February 24, 1898.

Illinois Farmers' Institute to F. M. Palmer, Dr.

July 1898		
July	1 To railroad fare, Clinton to Springfield, 50 trips, @ \$2.68.....	\$134 00
..	1 To hotel bill, 80 days, @ \$2.00.....	160 00
..	1 To cash for postage.....	10 00
..	1 To cash paid for soliciting advertising in Chicago.....	6 00
..	1 To hotel and street car fare in Chicago while soliciting advertisements for programme, 2 trips, 2 days each.....	12 00
		<hr/>
		\$322 00

Motion of Mr. Periam adopted, that the bill of Mr. Frank M. Palmer be referred back to the claimant for an itemized statement as to time and nature of the expense covered by the claim of \$322.00.

The Executive Committee presented the bill of Hughes Bros., of Clinton, for printing ordered by Mr. Frank M. Palmer in January, 1897, and amounting to \$25.25, without recommendation.

CLINTON ILL., December 1, 1897.
Illinois Farmers' Institute to Hughes Bros., Dr.

1897		
January	2 Letter heads.....	\$2 75
..	4 Notices to paste in report.....	2 50
..	9 Circular letters.....	4 75
..	12 Envelopes.....	2 75
..	18 5,000 notices.....	4 75
..	20 500 invitations	7 75
		<hr/>
		\$25 25

This work was ordered by F. M. Palmer, Pres.

Mr. Kimzey moved that the bill of Hughes Bros., amounting to \$25.25, be approved and that a warrant be drawn in favor of same.

Mr. Periam demanded the yeas and nays.

The yeas and nays were ordered.

The question was taken and there were: Yeas, 4; nays, 12; not voting, 2; as follows:

Yeas—Bartlett, Coolidge, Kimzey, Wilson. Nays—Beal, Dolton, Dunlap, Grout, King, Lindemann, Mills, Moore, Periam, Rossiter, Shank and Willmarth. Not voting—Dean and Sawyer.

So the motion of Mr. Kimzey to pay Hughes Bros. was not agreed to.

The Executive Committee presented without recommendation the itemized bill of Mr. W. E. Robinson for \$338.00.

Motion of Mr. Dunlap adopted, that all items for services rendered the Illinois Farmers' Institute and expenses incurred therefor by Mr. Robinson since July 1, 1897, be allowed and that a warrant be drawn therefor.

Motion of Mr. Kimzey adopted, that the following amounts included in the claim of Mr. Robinson be approved and ordered paid, viz.:

Eight days service in December, 1897.....	\$40 00
Eight days service in January, 1898.....	40 00
Ten days service in February, 1898	50 00
Postage used since July 1, 1897.....	24 00
Rent of typewriter since July 1, 1897.....	8 00
Service of stenographer since July 1, 1897.....	10 00
	<hr/>
Total.	\$172 00

Motion of Mr. Dunlap adopted, that the following claims for services, etc., by Mr. Robinson rendered prior to July 1, 1897, be not allowed, viz.:

To salary, 10 days in March, 1897.....	\$50 00
" 8 " April, 1897.....	40 00
" 10 " May, 1897.....	50 00
" 5 " June, 1897.....	25 00
Total	\$165 00

The Executive Committee presented, without recommendation, the following itemized bill of Mr. Frank M. Palmer, of Clinton, Ill., for \$356.00:

July 1898		
July	1 To railroad fare, Clinton to Springfield, 50 trips, @ \$2.68.....	\$134 00
"	1 To hotel bill, 80 days, @ \$2.00.....	160 00
"	1 To cash for postage.....	10 00
"	1 To cash paid for soliciting advertising in Chicago.....	6 00
"	1 To hotel and street car fare in Chicago while soliciting advertisements for programmes, 2 trips, 2 days each.....	12 00
"	1 Expense sending out reports: boxing, \$5.00; postage, \$20.00; express, \$10.00; drayage, \$1.00.....	36 00
		\$356 00

Mr. Grout moved that the bill of Mr. Palmer be not allowed.

Mr. Periam demanded the yeas and nays.

The yeas and nays were ordered.

The question was taken and there were: Yeas, 11; nays, 3; not voting, 3; as follows.

Yeas—Beal, Dolton, Dunlap, Grout, King, Mills, Moore, Periam, Rossiter, Willmarth and Wilson; total, 11. Nays—Bartlett, Coolidge and Kimzey; total, 3. Not voting—Dean, Sawyer, Shank; total, 3.

So the motion of Mr. Grout that the bill of Mr. Palmer be not allowed was agreed to.

The committee appointed to audit the reports of the Secretary and Treasurer, made the following partial report, which was received and ordered placed on record, and on motion further time was granted the committee for final report:

To the Illinois Farmers' Institute:

The undersigned committee, to whom was referred the reports of the Secretary and Treasurer, beg leave to report that they have compared the warrants drawn on the Treasurer by the Secretary and duly approved by the Executive Committee and ordered paid by the Board.

The appropriations and expenditures therefrom respectively are as follows:

Appropriations, Sec. 1, for expressage, stationery, etc.....	.....	\$1,200 00
Expenditures therefrom.....	\$308 95	
Balance to credit of same.....	891 05	1,200 00
Appropriation, Sec. 2, Library.....	.....	\$100 00
Expenditures therefrom.....	\$3 00	
Balance to credit of same.....	97 00	100 00
Appropriations, Sec. 3, editing report, etc .....	.....	\$1,200 00
Expenditures therefrom.....	\$651 20	
Balance to credit of same.....	548 80	1,200 00
Appropriations, Sec. 3, General Fund.....	.....	\$5,000 00
Expenditure therefrom.....	\$1,845 46	
Balance to credit of same.....	3,154 54	5,000 00
Warrants in favor County Institutes.....		\$1,812 70
The total credits to the several appropriations made by the State aggregate.....		4,691 39

The auditing committee recommend that hereafter all warrants drawn on the Treasurer shall specify the bank at which the same shall be paid, and that separate warrants hereafter be drawn for amounts chargeable to the respective appropriations made by the General Assembly.

In the absence of a statement from the bank as to the amount to the credit of the Treasurer of the Illinois Farmers' Institute the committee ask for further time to complete this report.

H. M. DUNLAP,
GEO. W. DEAN,
CHARLES F. MILLS.

Mr. Frank M. Palmer, of Clinton, Ill., presented the following claim for services in getting out the 1897 report of the Illinois Farmers' Institute, and amounting to \$300:

SPRINGFIELD, ILL., March 1, 1898.

Illinois Farmers' Institute to F. M. Palmer, Dr.

1898.		
March	1 To services in getting out report	\$300 00

Motion of Mr. Periam adopted that inasmuch as Mr. Palmer had not rendered the services set forth in the claim for \$300.00 that the same be laid on the table.

The President appointed as a committee to prepare a code of by-laws to be considered at the next meeting of the Board of Directors Messrs. Dunlap, Davenport, Grout, Dean and Rossiter.

Motion of Mr. Dunlap adopted that the Secratarary send a copy of the by-laws under which the board are now acting to each director.

The President appointed as his associates on the Executive Committee for the current year Messrs. Beal, Dolton, Wilmarth and King.

Motion of Mr. Periam adopted that the Secretary send 50 copies of the 1897 report to each County Farmers' Institute and 50 copies to each director, express charges to be prepaid, and that necessary appropriation for said express charges is hereby made.

Motion adopted that the bond of the Treasurer in amount be same as heretofore and that the sureties thereon be referred to the Executive Committee for approval.

Adjourned subject to the call of the President.

AMOS F. MOORE,
President.

CHARLES F. MILLS,
Secretary.

MINUTES OF MEETING OF THE BOARD OF DIRECTORS ILLINOIS FARMERS' INSTITUTE.

MORNING SESSION.

STATE HOUSE,
SPRINGFIELD, Tuesday, March 22, 1898.

The directors of the Illinois Farmers' Institute met at 10 o'clock a. m., pursuant to the following call of the President:

POLO, ILL., March 3, 1898.

Dear Sir:—It is the sense of the Executive Committee that the Board of Directors shall meet in Springfield, March 22, 1898, at 10 o'clock a. m., to consider the matter of accepting the resignation of the Treasurer, to act upon the report of the Committee on By-laws and transact other business, demanding immediate attention.

The hope is entertained that you may be able to report the dates of the coming County institute meetings in your Congressional district at the meeting of the Board of Directors, called for March 22, 1898.

The next annual report of the Illinois Farmers' Institute, we hope, may show that a Farmers' Institute is organized in each county in the State, and that meetings have or will be held in 1898.

Yours truly,

AMOS F. MOORE,
President Illinois Farmers' Institute.

Roll call showed the following directors present, viz.: Coolidge, Dean, Dolton, Grout, King, Lindeman, Mills, Moore, Periam, Rossiter, Sawyer, Shank, Wilmarth and Wilson.

Absent—Bartlett, Beal, Davenport, Dunlap, Gurler, Inglis, Kimzey, Mann, Pearce, Prindle, Steenberg, Stewart and Uhlein.

The minutes of the meeting of the Board held March 1, 1898, were read and on motion of Mr. Periam approved.

The minutes of the meeting of the Executive Committee held March 2 and 3, 1898, were read and on motion the action of the Executive Committee was approved.

Motion of Mr. Lindeman adopted, that no smoking be allowed in the office of the Board during the sessions of the directors.

The President presented the resignation of Thomas W. Wilson as Treasurer, which was read as follows:

SPRINGFIELD ILL., March 2, 1898.

To the Honorable the Board of Directors of the Illinois Farmers' Institute:

Gentlemen:—I beg leave to hereby tender my resignation of the office of Treasurer of the Illinois Farmers' Institute, and to request that an early meeting of your honorable Board be held, my resignation accepted, and a successor in office elected to whom I stand ready to account and pay over all funds in my hands, as such Treasurer.

Yours respectfully,

THOS. W. WILSON.

The Treasurer made the following report of receipts and expenses of the State Institute since the meeting of the Board of Directors held March 1, 1898:

TREASURER'S REPORT.

Thos. W. Wilson, Treasurer, in Account with the Illinois Farmers' Institute, March 22, 1898.

DR.			
To balance on hand March 1st		\$4,691 39	
To amount received from State Treasurer on account of County Farmers' Institutes.....		424 31	
			\$5,115 70
CR.			
By amount paid out as per list of warrants attached marked "A".....		\$1,881 54	
By amount paid to County Farmers' Institutes as per list attached marked "B"		424 31	
By balance in treasury		2,809 85	
			\$5,115 70

(Signed) THOS. W. WILSON,
Treasurer.

No. of Warrant.	To Whom Drawn.	General Fund.
100	H. M. Dunlap.....	\$5 50
101	Oliver Wilson	160 23
102	"	68 99
103	"	25 95
104	Charles H. Dolton.....	7 10
105	"	14 05
106	Amos F. Moore	106 22
107	"	27 45
108	"	18 54
109	"	50 00
109 ¹ / ₂	Treasurer Jersey County Institute	20 00
110	" McHenry	20 00
111	" Kendall	18 50
112	" Livingston	20 00
113	"	
114	Illinois State Register	52 30
115	G. A. Wilmarth.....	42 10
116	A. P. Grout.....	23 07
117	"	25 15
118	G. A. Wilmarth.....	14 30
119	"	
120	F. M. Higgins.....	10 00
121	Mrs. N. S. Kedzie.....	6 80
122	"	
123	Illinois State Register	164 55
124	"	
125	"	
126	Jonathan Periam	19 25
127	Phillips Bros.....	50 00
128	Annie Springer.....	7 50
129	Secretary Winnebago County Institute	19 93

No. of Warrant.	To Whom Drawn.	General Fund.	
130	Treasurer Christian County Institute.....	\$14 00	
131	A. A. K. Sawyer	17 76	
132	Treasurer St. Clair County Institute.....	10 25	
133	Chas. B. Hatch	47 50	
134	Treasurer Putnam County Institute.....	15 00	
135	W. E. Robinson.....	7 00	
136	W. W. Lewis.....	8 75	
137	J. H. Coolidge.....	29 58	
138	Champaign Gazette	3 50	
139	Treasurer Bureau County Institute	8 16	
140	Iroquois	20 00	
141	C. G. Winn, Pike county	20 00	
142	W. E. Robinson.....	172 00	
143	F. C. Rossiter.....	22 00	
144	L. N. Beal	39 84	
145	S. Noble King.....	5 25	
146	Treasurer Bureau County Institute.....	11 46	
147	DeKalb	1 58	
148	G. W. Dean.....	42 38	
149	A. W. Rice	4 70	
150	Treasurer DeWitt County Institute	20 00	
151	Secretary Lee County Institute.....	20 00	
152	Ogle	20 00	
153	L. N. Beal.....	16 20	
154	Alvin C. Beal.....	11 70	
155	James A. Stone	4 38	
156	W. R. Kimsey.....	28 65	
157	L. N. Beal	11 82	
158	Treasurer Piatt County Institute	20 00	
159	F. M. Palmer.....	28 14	
160	Treasurer Perry County Institute	20 00	
161	Chas. A. Lindemann	17 65	
162	C. D. Bartlett	14 30	
163	J. H. Coolidge.....	18 00	
164	C. D. Bartlett	17 07	
165	W. R. Kimsey.....	29 84	
166	Mrs. Sarah Steenburg.....	19 50	
167	D. H. Shank.....	46 68	
168			\$1,881 54

EXPENSE OF HOLDING COUNTY FARMERS' INSTITUTES.

Name of Treasurer.	County.	Amount.
F. B. Walker.....	Stephenson	\$50 00
William Schaumloeffel ..	St. Clair.....	50 00
Wilber P. Snare.....	Starke.....	40 66
John Myer.....	Washington.....	50 00
H. H. Alexander.....	Will.....	50 00
J. W. Bicks	Jersey	50 00
C. H. Scott.....	Macon	50 00
Frank Leach.....	Boone.....	40 00
J. W. Caldwell.....	Randolph	43 65
Total		\$424 31

Motion of Mr. Rossiter adopted, that the report of the Treasurer be referred to the Executive Committee for examination and report.

Adjourned to 1:30 o'clock p. m.

AFTERNOON SESSION.

The Board met pursuant to adjournment.

Called to order by Vice-President Wilmarth.

The following answered to roll call: Beal, Coolidge, Dean, Dolton, Grout, King, Lindemann, Mills, Moore, Periam, Rossiter, Sawyer, Shank, Wilmarth and Wilson.

Absent: Bartlett, Davenport, Dunlap, Gurler, Inglis, Kimsey, Mann, Pearce, Prindle, Steenberg, Stewart and Uhlein.

The report of the Committee on By-Laws was called for.

Mr. Grout, in the absence of Mr. Dunlap, the chairman of the Committee on By-Laws, stated that the Committee on By-Laws had not been convened for the purpose of considering the by-laws, and that the importance of the duties imposed upon the committee were such as to make it necessary for the committee to ask for further time for perfecting a code of by-laws, which the committee requested.

Motion of Mr. Sawyer adopted that the Committee on By-laws be granted the time requested for the consideration of a code of by-laws.

Motion of Mr. King adopted, that the next annual meeting of the Illinois Farmers' Institute be held Tuesday, Wednesday and Thursday, February 21, 22 and 23, 1899.

President Moore in the chair.

Motion of Mr. Grout adopted, that the Board proceed to the election of a Treasurer, vice T. W. Wilson, resigned.

Motion of Mr. Oliver Wilson adopted, that the Board proceed to the nomination of a Treasurer by ballot and that the first vote be informal.

The President appointed Messrs. Sawyer and Wilmarth tellers.

The informal ballot for nomination of Treasurer resulted as follows: Brainard, 5; Coolidge, 1; Dean, 1; Grout, 3; King, 1; Wilmarth, 2; Oliver Wilson, 1; total, 14.

Motion of Mr. Rossiter adopted, that formal nominations be received for the office of Treasurer.

Mr. Dolton placed Mr. B. H. Brainard, of Springfield, in nomination.

Vice-President Wilmarth was called to the chair.

Mr. Moore placed Mr. S. Noble King in nomination.

Mr. Dean placed Mr. A. P. Grout in nomination.

Motion of Mr. Beal adopted, that the Board take a recess for five minutes for the purpose of informal conference.

The Board was convened after recess with same attendance as before.

On motion, the Board proceeded to ballot for Treasurer with the following result:

CANDIDATE.	BALLOT.					
	Informal.	First.	Second.	Third.	Fourth.	Fifth.
B. H. Brainard.....	5	6	4	6	6	6
J. H. Coolidge.....	1	.....	.....	.....	.....	.....
A. L. Dean.....	1	.....	.....	.....	.....	.....
A. P. Grout.....	3	4	6	7	7	9
S. N. King.....	1	5	5	2	1	.....
G. A. Wilmarth.....	2	.....	.....	.....	1	.....
Oliver Wilson.....	1	.....	.....	.....	.....	.....
	14	15	15	15	15	15

Motion adopted that the election of Mr. Grout as Treasurer be made unanimous.

Mr. Coolidge moved that the citizens of any place desiring the location of the next annual meeting of the Illinois Farmers' Institute be requested to file applications therefor on or before June 1, 1898, and that the Secretary be instructed to send invitations for proposals for the location of said meeting accordingly.

Mr. King moved to amend the motion by changing the date for filing applications to October 1, 1898. Amendment lost. Original motion adopted.

Motion by Mr. Dean adopted that the directors be requested to secure papers of superior merit read at county institute meetings in their respective districts and forward the same to the Executive Committee for such selection and publication as said committee may deem advisable to secure a well balanced annual report.

Motion of Mr. King adopted, that upon the filing of a good and sufficient bond by Mr. A. P. Grout, the Treasurer-elect, and the approval of the accounts of the retiring Treasurer, Mr. T. W. Wilson, by the Executive Committee, that said Executive Committee be authorized to make transfer of the accounts and funds to the Treasurer-elect by a warrant on the retiring Treasurer signed by the President and countersigned by the Secretary.

Motion by Mr. Wilmarth adopted that the retiring Treasurer, Mr. T. W. Wilson, be allowed a commission of two per cent for such portion of the State appropriation of \$7,500.00 as he may have paid out on approved warrants.

Motion of Mr. Grout adopted that the compensation heretofore paid the Secretary and amounting to \$5.00 per day and like compensation ordered paid the Superintendent of Institutes be suspended until the remuneration for the services by said officers is provided for in the new by-laws and that the compensation of the Secretary and Superintendent from March 1, 1898, until further action is taken by this Board be fixed at the rate of \$1,200 per annum, payable monthly. Said compensation to include clerk hire and stenographer.

Mr. Periam moved that a sum not exceeding fifteen hundred dollars be appropriated and made available for expenses provided for in the act making appropriation to the Illinois Farmers' Institute, and that such portion of said sum as may be necessary is hereby made

available for such expense accounts as may be approved by the Executive Committee, all such expenditures to be payable on warrant signed by the President and countersigned by the Secretary, and subsequently submitted to the Board for approval.

Mr. Dolton demanded the yeas and nays. The yeas and nays were ordered.

The question was taken and there were yeas, 12; nays, none; not voting, none; as follows:

Yeas—Beal, Coolidge, Dolton, King, Lindeman, Mills, Periam, Rossiter, Sawyer, Shank, Wilmarth and Wilson.

So the motion of Mr. Periam was agreed to.

Adjourned to meet at the Leland Hotel at 8 o'clock p. m.

EVENING SESSION.

LELAND HOTEL,
SPRINGFIELD, March 22, 1898.

The Board of Directors met at 8 o'clock as per adjournment.

Vice-President Wilmarth in the chair.

Present—Beal, Coolidge, Dolton, King, Lindeman, Mills, Miller Moore, Periam, Rossiter, Sawyer, Shank, Wilmarth and Wilson.

Absent—Bartlett, Davenport, Dean, Dunlap, Grout, Gurler, Inglis, Kimzey, Mann, Pearce, Prindle, Steenberg, Stewart and Uhlein.

Motion of Mr. Dolton adopted that the Secretary correspond with officers of State Farmers' Institute organizations in the several states and request an exchange of Institute reports in sufficient quantity to supply each member of this Board with a copy of each of the respective reports.

Motion of Mr. Rossiter adopted that each member of this Board be requested to have a copy of each of the annual reports of the Illinois Farmers' Institute placed in each public library in their respective Congressional districts.

Motion by Mr. Coolidge adopted that the Secretary and Superintendent confine his efforts to office work until such time as the report of the Committee on By-Laws prescribing the duties of said officer is adopted.

Mr. Periam moved to reconsider the former vote on the motion of Mr. Coolidge.

Mr. Wilmarth demanded the yeas and nays. The yeas and nays were ordered.

The question was then taken and there were yeas, nine; nays, three; not voting, none; as follows:

Yeas—Beal, Coolidge, Dolton, King, Periam, Sawyer, Shank, Wilmarth and Wilson—9.

Nays—Miller, Moore and Rossiter.

So the motion of Mr. Periam to reconsider the vote on the motion of Mr. Coolidge was agreed to.

Motion by Mr. Periam adopted that the Secretary correspond with Hon. D. W. Prindle, the director of the 22nd Congressional district, calling his attention to the great necessity of organizing County Institutes in said district and ascertain as to his disposition to perform the duties of the office of director and in case his business prevents him from efficiently discharging the duties of the position that he be requested to resign.

Mr. Coolidge moved to adjourn.

Mr. Wilmarth demanded the yeas and nays. The yeas and nays were ordered.

The question was taken and there were yeas 3, nays 10, not voting none, as follows:

Yeas—Coolidge, Sawyer, Wilson—3.

Nays—Beal, Dolton, King, Lindeman, Mills, Moore, Periam, Rossiter, Shank and Wilmarth—10.

So the motion of Mr. Coolidge to adjourn was not agreed to.

Mr. Sawyer moved that any director be authorized to secure the aid of any other director in the work of organizing County Institutes in his district and that the expenses of any director incurred while in the discharge of such service be paid by the Board.

Mr. Lindeman moved as an amendment that directors making application for the assistance of members of the Board file applications therefor with the President. Amendment adopted.

Question being called and vote ordered on the question as amended.

Mr. Coolidge demanded the yeas and nays. The yeas and nays were ordered.

The question was taken and there were yeas 7, nays 1, not voting, 1, as follows:

Ayes—Beal, Dolton, King, Lindeman, Mills, Moore, Periam, Sawyer, Shank Wilmarth and Mills—11. Nays—Coolidge—1. Not voting—Rossiter—1.

So the motion of Mr. Sawyer as amended by Mr. Lindeman was agreed to.

Motion of Mr. Dolton adopted that the vote in favor of the amended motion of Mr. Sawyer be made unanimous.

The minutes of the morning, afternoon and evening sessions of the day were read and on motion of Mr. Coolidge approved.

Adjourned subject to the call of the President.

AMOS F. MOORE,
President.

CHARLES F. MILLS,
Secretary.

MINUTES OF MEETINGS OF THE EXECUTIVE COMMITTEE ILLINOIS FARMERS' INSTITUTE.

SHERMAN HOUSE, CHICAGO, Tuesday, Sept. 6, 1897.

The Executive Committee of the Illinois Farmers' Institute called to order pursuant to a call issued by acting Chairman F. M. Palmer, at the Sherman House, Chicago, Ill., September 6, 1897, at 11 o'clock a. m.

There being present Palmer, Coolidge, Mann and Bartlett.

Moved and supported that the Superintendent of Institutes be authorized to correspond with suggested speakers and others and learn upon what terms they can be secured to address County Institutes.

Moved and carried that the Secretary and Superintendent of Institutes be directed to spend such time at the Springfield office as may be necessary to thoroughly organize and arrange for the holding of Institutes the coming winter.

Moved and carried that Miss Bessie Trotter be employed as stenographer and typewriter at the rate of five dollars per week and be allowed one dollar per week additional for caring for the office.

The following motion was unanimously adopted, that the Secretary's compensation be fixed at five dollars per day and expenses for time he is actually engaged in the discharge of his official duties as Secretary.

The above minutes were read and approved.

Adjourned to meet upon the call of the Chairman.

OLIVER WILSON,
Secretary Executive Committee.

STALEY HOTEL, SPRINGFIELD, Sept. 30, 1897.

Pursuant to a call issued by President Moore, the Executive Committee of the Illinois Farmers' Institute met at the Staley Hotel, Springfield, at 8:30 o'clock p. m.

There being present Moore, Mann, Dolton, Grout and Wilmarth.

Wilmarth moved and Dolton seconded, that the Executive Committee now proceed to fix the Secretary's per diem. Carried.

Moved and supported that the Secretary receive five dollars per day for all time actually spent in the discharge of his official duties, also that he be allowed his necessary traveling expenses. Carried.

The Secretary presented his bill for services rendered and amounting to \$275.00, itemized as follows:

SPRINGFIELD, ILLINOIS, Sept. 30, 1897.

Illinois Farmers' Institute, to W. E. Robinson, Dr.

To salary for March, 10 days.....	\$50 00
.. April, 8 days.....	40 00
.. May, 10 days.....	50 00
.. June, 5 days.....	25 00
.. July, 5 days.....	25 00
.. Aug., 7 days.....	35 00
.. Sept., 10 days.....	50 00
	<hr/>
	\$275 00

The bill of the Secretary was ordered filed and action thereon deferred until the Board secures a decision from the Attorney General regarding the legality of paying out of the State appropriation money for work performed prior to July 1, 1897.

The above minutes were read and approved.

The committee adjourned to meet at the Sherman House, Chicago, Tuesday, October 5, 1897, at 2:30 o'clock p. m.

OLIVER WILSON,
Secretary Executive Committee.

The following communication from the Attorney General was received by the President of the Illinois Farmers' Institute:

SPRINGFIELD, October 1, 1897.

Amos F. Moore, Esq., President Illinois Farmers' Institute, Polo, Ill.:

Dear Sir:—In reply to your inquiry of this date as to whether or not the Illinois Farmers' Institute can lawfully use the appropriations made by the last General Assembly for the payment of expenses or indebtedness accrued or incurred before 1897, I have the honor to say that I have carefully examined the statute and am of the opinion that they can not. The appropriations made by the act approved June 5, 1897, were intended to and are for expenses of the Institute there indicated, for the years 1897 and 1898, and I find nothing in the act making any appropriation to cover any deficiency in the appropriations theretofore made. That should be done and is usually done by means of a deficiency appropriation bill or deficiency appropriation clause inserted in some bill, and as stated I find no such clause in the act of 1897.

Sec. 4 of the act of 1895 creating the Illinois Farmers' Institute expressly provides that the Board of Directors shall make no appropriation without funds in hand to meet the same, and that the State of Illinois shall in no event be liable or responsible for any debt, obligation or contract made by the institute or its Board of Directors. The meaning of that is that the Board of Directors can not anticipate the future but must rely upon the appropriations made, and can incur no expenses until such appropriations are available. The act of 1897 did not go into force until July 1, 1897. It follows, therefore, that no expense incurred by the Board prior to that date, can be paid out of those appropriations.

Whether the appropriations made for the years 1897 and 1898 must end January 1, 1899 or extend to July 1, 1899, is a more difficult question, but as such appropriation laws do not go in force until July 1 after the meeting of the General Assembly, I am inclined to the opinion that the appropriations made in 1897 are meant to cover expenses of the Institute from July 1, 1897, to July 1, 1899. That at least is the practical view to take of it. Otherwise there would be an interval of six months not covered by the appropriation.

Yours truly,

E. C. AKIN,
Attorney General.

SHERMAN HOUSE,
CHICAGO, October 5, 1897.

The Executive Committee met pursuant to adjournment at the Sherman House, Chicago, October 5, 1897, at 2:30 o'clock p. m.

There being present, Moore, Mann, Grout and Wilmarth.

Moved and supported that the motion made and adopted to fix the Secretary's per diem at \$5.00 be reconsidered. Lost.

Mr. Wilmarth presented the following:

Resolved, That the Superintendent of Institutes be requested to have his office at his own home, and that Miss Trotter's services as stenographer be discontinued at the Springfield office and that the Superintendent is hereby authorized to employ such help as is necessary to successfully carry on the work, the expenses not to exceed \$10.00 per week.

Adopted.

Moved and carried that each director be allowed one or more speakers in each of his counties, the expenses not to exceed \$20.00 per county.

The committee took a recess until 8:30 o'clock p. m.

The committee met after recess at 8:30 p. m. as per adjournment. Called to order by the chairman. Present as before.

The subject of securing speakers for County Institutes was taken up.

On motion the Superintendent was instructed to add to the list of speakers already prepared such names as he may be able to obtain and submit the same to the Executive Committee.

Moved and seconded that the Superintendent refer the list of proposed speakers to a session of the Executive Board to be called by the chairman.

Meeting then adjourned.

OLIVER WILSON,
Secretary Executive Committee.

COLISEUM HOTEL, CHICAGO, Nov. 3, 1897.

The Executive Committee met pursuant to call issued by direction of Chairman Moore at the Coliseum Hotel, Chicago, November 3, 1897.

There being present Moore, Mann, Dolton, Willmarth and Grout.

The minutes of the last meeting of the Executive Committee were read and after slight correction adopted.

Moved and supported that a warrant be drawn in favor of W. E. Robinson for services rendered as Secretary from July 1, 1897, to September 30, 1897, for the amount of \$110.00, as per bill presented by him and filed. Carried.

On motion the committee adjourned until 8 o'clock a. m. tomorrow.

OLIVER WILSON,
Secretary Executive Committee.

CHICAGO, ILLINOIS, Nov. 4, 1897.

The Executive Committee met as per adjournment at 8 o'clock a. m.

The Superintendent of Institutes reported that according to instructions he had moved his office from Springfield to his own home and dispensed with the services of the stenographer, Miss Trotter.

The Superintendent presented a list of speakers, which was approved and he was directed to add such names as he may deem best or that may be recommended by a member of the Board of Directors.

Moved and supported that the Superintendent be instructed to publish a list of speakers for the benefit of County Institutes, designating those that can be secured for expenses and those who will have to be paid a per diem in addition, with the further information that the Illinois Farmers' Institute will pay \$20.00 to each County Institute in the State where meetings are held in accordance with the statute toward paying the expenses and per diem of speakers selected from the list furnished or upon the approval of the Superintendent or a member of the Board of Directors of the county calling for such speakers. Carried.

Moved that the same rule that applies to the free list of speakers apply likewise to the paid list of speakers.

Meeting then adjourned.

OLIVER WILSON,
Secretary Executive Committee.

SPRINGFIELD, ILLINOIS, Nov. 30, 1897.

The Executive Committee met at the Staley Hotel, Springfield, on the call of Chairman Amos F. Moore.

There being present Moore, Mann, Willmarth, Grout and Dolton.

The minutes of the last meeting of the Executive Committee were read and approved.

The following bills were examined, audited and recommended to the Board of Directors for payment, viz.:

L. N. Beal.....	\$11 82
O. Wilson.....	10 28
J. Perriam.....	5 00
J. H. Coolidge.....	10 50
G. A. Wilmarth.....	18 00
.. ..	9 00
.. ..	2 00
.. ..	10 00
F. I. Mann	28 40
A. P. Grout	23 70
C. H. Dolton.....	7 25
L. C. Lindemann.....	16 80
F. C. Rossiter.....	11 60
A. A. K. Sawyer.....	12 38
J. H. Shank.....	11 57
E. Davenport.....	13 65
W. E. Robinson	48 00
J. H. Coolidge.....	14 76
Walter Kimzey.....	18 34
G. W. Dean.....	7 96
.. ..	1 50
.. ..	5 15
.. ..	12 96
O. Wilson, Superintendent.....	427 43

Then adjourned.

OLIVER WILSON,
Secretary Executive Committee.

CHICAGO, ILLINOIS, December 8, 1897.

The Executive Committee met at 2 o'clock p. m. Wednesday, December 8, 1897, at the Sherman House, on the call of Chairman Moore.

Present: Chairman Moore, Wilmarth, Dolton, Grout and Mann.

On motion the committee repaired to the National Hotel, Chicago, and resumed work.

Mr. Dolton nominated Mr. Mann as Secretary *pro tem.* of the committee and he was elected.

Motion of Mr. Wilmarth adopted that Chairman Moore be authorized to make arrangements with Superintendent Wilson to conduct the correspondence with the officers of County Institutes at a reasonable compensation. Carried.

F. J. MANN,
Secretary pro tem.

STATE HOUSE, SPRINGFIELD, January 21, 1898.

The Executive Committee met pursuant to call issued by Chairman Moore, at 10:30 a. m.

There being present Chairman Moore, Dolton, Grout, Wilmarth and Secretary Wilson.

The minutes of the meeting of the Committee held in Springfield November 30, 1897, were read and approved.

Moved and seconded that the Secretary be instructed to request F. J. Mann to forward the minutes of the meeting held in Chicago December 8, 1897, to the Secretary for record.

The following bills were presented and approved:

L. N. Beal.....	\$14 10
Robert Morris.....	6 00
Montgomery County Institute.....	20 00
Morgan County Institute.....	17 30
Carroll County Institute.....	20 00
Gallatin County Institute.....	20 00
Stark County Institute.....	17 83
Douglas County Institute.....	14 00
G. A. Wilmarth.....	8 50
D. W. Prindle.....	15 57
G. A. Wilmarth.....	9 00
G. A. Wilmarth.....	4 00
J. H. Coolidge.....	11 00
A. P. Grout.....	25 15
Charles H. Dolton.....	7 10
G. A. Wilmarth.....	14 30
Charles F. Mills.....	300 00
Illinois State Register.....	52 00
Amos F. Moore.....	106 22
Oliver Wilson.....	170 40

Resolved, That the Secretary of this Committee be and is hereby directed to forward the above mentioned bills to the Secretary, Mr. W. E. Robinson, and request him to issue warrants on the Treasurer for the several amounts, and forward the same to President Moore for signature and transmittal to the parties named thereon.

The bill of the Superintendent of Institutes was presented and a roll call ordered, resulting in the following vote:

Those voting in favor of allowing the claim of the Superintendent were as follows, viz.: Moore, Dolton, Wilmarth and Grout.

On motion the committee adjourned to 1:30 o'clock p. m.

AFTERNOON SESSION.

The committee met as per adjournment with same attendance.

The committee on program for the next annual meeting of the Illinois Farmers' Institute submitted copy of program for the Campaign meeting, which was approved.

Moved and carried that the committee on program be instructed to print and distribute 15,000 of said programs.

Moved and seconded that Charles F. Mills be allowed \$300.00 for preparing manuscript and editing the annual report of the Illinois Farmers' Institute.

A roll call was demanded and the following vote was taken:

Those voting aye are as follows: Moore, Dolton, Grout and Wilmarth.

Moved and seconded that the Superintendent be and is hereby directed to secure a competent stenographer to keep a full and accurate report of the proceedings of the annual meeting of the State Institute, and to reduce the same to type. Carried.

Moved and seconded that Oliver Wilson and Charles F. Mills be requested to visit Champaign and arrange the details for the meeting of the Illinois Farmers' Institute, select and arrange with a suitable hotel for headquarters and arrange with such other hotels and boarding houses as they may deem best for the accommodation of visitors in attendance. Carried.

On motion Charles F. Mills was authorized to make such arrangements with the railroads for excursion rates and advertising as he and the Superintendent may deem necessary.

Mr. Mills is authorized to visit Chicago and Peoria, if necessary, to confer in person with the railroad officials in regard to posters, advertising, etc.

The committee, on motion, took a recess until 7:30 o'clock p. m.

EVENING SESSION.

The committee met at 7:30 o'clock p. m. Called to order by Chairman Moore.

Moved and seconded that the Superintendent be and is hereby authorized to furnish acceptable speakers to address the State Institutes of Indiana, Michigan and Wisconsin in exchange for speakers furnished by the Institute officials of said states for the annual meeting of the Illinois Farmers' Institute. Carried.

On motion the committee adjourned.

OLIVER WILSON,
Secretary Executive Committee.

ST. NICHOLAS HOTEL, SPRINGFIELD, Feb. 28, 1898.

The Executive Committee met on the call of Chairman Moore.

Present: Chairman Moore, Dolton, Wilmarth and Secretary Wilson.

The committee examined, approved and voted to recommend to the Board for payment the following bills:

DeKalb County Farmers' Institute	\$50 00
Lee " "	1 58
Ogle " "	20 00
A. F. Moore	27 45
Christian County Farmers' Institute	14 00
Henry " "	16 40
St. Clair " "	10 25
Putnam " "	15 00
Boone " "	15 00
Jersey " "	20 00
Randolph " "	20 00
Dewitt " "	20 00
Pike " "	20 00

On motion the claim of the Clark County Farmers' Institute was referred to Director D. H. Shank for further information.

On motion the committee adjourned to 8:30 o'clock tomorrow morning at the Leland Hotel.

OLIVER WILSON,
Secretary Executive Committee.

LELAND HOTEL, SPRINGFIELD, March 1, 1898.

The Executive Committee met at 8:30 a. m., at the Leland Hotel, as per adjournment.

Present, Moore, Dolton, Grout, Wilmarth and Secretary Wilson.

The committee examined, approved and voted to recommend to the Board for payment the following bills, viz.:

G. W. Dean.....	\$42 38
A. A. K. Sawyer.....	17 76
J. H. Coolidge.....	29 58
J. Periam.....	19 25
Champaign Gazette.....	3 50
A. C. Rice, Arnold, Ill.....	4 70
Geo. McKerrow, Madison, Wis.....	3 25
Beardsley Hotel, Champaign.....	47 50
Fred H. Rankin, Athens.....	7 25
Dr. C. C. Mills, Decatur.....	4 30
Mrs. Nellie S. Kedzie, Peoria.....	6 80
— Higgins, LaSalle.....	10 00
Mrs. Mary Turner Carriel, Jacksonville.....	6 24
Mrs. L. G. Chapman, Freedom.....	10 21
Hon. J. A. Mount, Indianapolis, Ind.....	5 00
G. A. Wilmarth.....	42 10
A. P. Grout.....	23 07
Oliver Wilson.....	25 95
Oliver Wilson.....	68 99
Amos F. Moore.....	18 54
C. H. Dolton.....	14 05
F. C. Rossiter.....	22 00
C. D. Bartlett.....	18 00
W. E. Robinson.....	7 00
Menard Co. Farmers' Institute.....	19 69
DuPage.....	20 00
L. N. Beal.....	39 84
Mrs. Sara A. Steenberg.....	19 50
H. M. Dunlap.....	5 50
C. J. Lindemann.....	17 65
Perry Co. Farmers' Institute.....	20 00
Clark.....	17 96
D. H. Shank.....	45 24
Edgar Co. Farmers' Institute.....	15 30
Marion.....	20 00
W. R. Kimzey.....	29 84
J. H. Coolidge.....	17 07
W. R. Kimzey.....	28 65
A. A. K. Sawyer.....	18 36
Amos F. Moore, postage.....	50 00
C. J. Lindemann.....	14 30
L. N. Beal.....	12 82
James A. Stone.....	4 38
W. E. Robinson.....	8 75
Illinois State Register, programs.....	164 55
Anna Springer.....	7 50
Piatt Co. Farmers' Institute.....	20 00
S. Noble King.....	5 25
Phillips Bros.....	50 00
F. M. Palmer.....	28 14
Geo. H. Gordon.....	4 47
D. H. Shank.....	5 26

The minutes of the meetings of the Executive Committee held in Chicago, December 8, were read and approved.

The minutes of the meeting of the Executive Committee held in Springfield, January 31, were read and approved.

On motion, the committee adjourned, subject to the call of the Chair.

OLIVER WILSON,
Secretary Executive Committee.

LELAND HOTEL, SPRINGFIELD,
March 2, 1898, 10 o'clock a. m.

The Executive Committee met on the call of Chairman Moore.

Present: Messrs. Moore, Dolton, Wilmarth, Beal and King.

Motion of Mr. Wilmarth adopted that it is the sense of the committee that the Superintendent of Institutes shall do no work as Superintendent until the next meeting of the board of directors, except so far as is necessary in editing the annual report.

Motion of Mr. Wilmarth adopted that the Secretary be instructed to publish in the annual report the portraits of all the directors of this association with the approval of each, and the following speakers at the late annual meeting, viz.: Mrs. Carriel, Mrs. Kedzie, Mrs. Dunlap, Mrs. Chapman, Gov. Tanner, Gov. Mounts, Dr. Draper, Hon. Geo. E. McKerrow and Prof. W. E. Latta.

Motion of Mr. Wilmarth adopted that the Secretary be instructed to perform no duties as Secretary unless actually necessary until the Committee on By-Laws report at the next meeting of the board of directors.

Motion of Mr. Wilmarth adopted that the Secretary be instructed not to employ a stenographer until the next meeting of the board of directors.

Adjourned to 2 o'clock p. m.

AFTERNOON SESSION.

LELAND HOTEL, SPRINGFIELD,
2 o'clock, Wednesday, March 2, 1898.

The Executive Committee met as per adjournment.

Called to order by Chairman Moore.

Present: Messrs. Moore, Dolton, King, Wilmarth, Beal and Secretary Mills.

The following communication from Thos. W. Wilson, Treasurer, was read:

SPRINGFIELD, ILL., March 2, 1898.

To the Honorable, the Board of Directors of the Illinois Farmers' Institute:

GENTLEMEN:—I beg leave to hereby tender my resignation of the office of Treasurer of the Illinois Farmers' Institute, and to request that an early meeting of your honorable board be held, my resignation accepted, and a successor in office elected to whom I stand ready to account and pay over all funds in my hands as such treasurer.

Yours respectfully,

T. W. WILSON.

Motion of Mr. Wilmarth adopted that a committee be appointed to confer with the Attorney General for the purpose of obtaining information concerning the authority of the Executive Committee to consider the matter of accepting the resignation of the Treasurer and the appointing of a *pro tem* Treasurer until the board of directors can be convened to fill the vacancy.

Motion of Mr. Wilmarth adopted that a warrant be drawn on the Treasurer T. W. Wilson for the balance of funds in his hands as Treasurer of the Illinois Farmers' Institute and that the proceeds of said warrant be deposited in the State National Bank of Springfield, Ill., to the credit of the Illinois Farmers' Institute, and that President Moore instruct the officers of said State National Bank to pay from said funds any warrants previously drawn on said fund that may be duly signed by the President and Secretary of the Illinois Farmers' Institute, the same having been duly approved and ordered paid at a meeting of the board of directors.

The yeas and nays having been demanded,

The yeas and nays were ordered.

The question was taken, and there were yeas 5, nays none, not voting none, as follows: Yeas—Moore, Dolton, King, Wilmarth and Beal.

So the motion of Mr. Wilmarth was agreed to.

The chair appointed Mr. Dolton a committee to confer with the Attorney General and obtain opinion as to the course to be pursued in reference to the resignation of the Treasurer.

Motion of Mr. Wilmarth adopted, that Mr. Dolton submit the foregoing resolution to the Attorney General and obtain his opinion as to the proper course to be pursued in reference to the resignation and the disposition of the funds tendered by the Treasurer.

On motion, adjourned to 7:30 o'clock p. m.

EVENING SESSION.

LELAND HOTEL, SPRINGFIELD,
7:30 o'clock p. m., Wednesday, March 2, 1898.

The Executive Committee met as per adjournment, Mr. Moore in the chair.

Present, Messrs. Moore, Dolton, King, Wilmarth and Beal.

Mr. Dolton reported that he had submitted the matter of the resignation of the Treasurer and the proper disposition of the funds in his hands to the Attorney General, who promised to duly consider the question and submit an opinion tomorrow morning. Mr. Dolton stated that the Attorney General was of the opinion that the Executive Committee could take no action in the matter.

Motion of Mr. Wilmarth adopted, that it is the sense of the Executive Committee that the President be requested to call a meeting of the Board of Directors at the State House, Springfield, Tuesday, March 22, 1898, at 10 o'clock a. m., to consider the matter of accepting the resignation of the Treasurer, to act upon the report of the Committee on By-Laws, and transact any other business demanding attention.

The ayes and nays being called, all voted in favor of the adoption of the motion of Mr. Wilmarth, as follows: Messrs. Moore, Dolton, King, Wilmarth and Beal.

Motion of Mr. Wilmarth adopted, that each Director be requested to arrange a circuit of meetings of County Farmers' Institutes in their respective districts at the earliest possible date, to the end that convenient dates may be arranged for coming Institute meetings, and to provide for the expenses of this work the Executive Committee will recommend that each Director be authorized to pay the expense of a single representative from each County Institute to a meeting to be held at some central point in the respective congressional districts, to consider and decide upon dates of meetings, the speakers and other matters of common interest, and further, that the bills for traveling expenses of the Director and county delegate in the furtherance of this work, will be approved by the Executive Committee and recommended for payment by the Illinois Farmers' Institute. It is further recommended that Directors be requested to advise the Secretary, without unnecessary delay, of the dates fixed for county meetings, speakers engaged and any other matters of general interest to the Directors of the Illinois Farmers' Institute.

Motion of Mr. Wilmarth adopted that the Secretary have printed necessary stationery, blanks, warrant book, etc.

Motion of Mr. Dolton adopted that the address prepared by Gov. Tanner, for the annual meeting at Champaign, be published in the annual report in its proper order.

Adjourned to 8 o'clock a. m. tomorrow.

MORNING SESSION.

LELAND HOTEL, SPRINGFIELD,
Thursday, March 3, 1898, 9 o'clock a. m..

The Executive Committee was called to order by Chairman Moore.
Present: Messrs. Moore, Dolton, Beal and Secretary Mills.

Mr. Dolton reported that in a conference with the Attorney General he had been advised by that officer that the Executive Committee of the Illinois Farmers' Institute could not accept the resignation of the Treasurer or receive the funds of the Illinois Farmers' Institute in his hands, but in case of the determination of the Treasurer to resign and at once retire from service as such, that he could tender his resignation in writing and deposit the funds in his hands in a bank to the credit of the Illinois Farmers' Institute, and further, that the Executive Committee had no authority to elect a Treasurer.

Motion of Mr. Dolton adopted that the Secretary be instructed to have printed a book for keeping the record of expenses of the Illinois Farmers' Institute in tabulated form, and that all vouchers paid to date be properly posted in said financial record.

Adjourned subject to the call of the chairman.

AMOS F. MOORE,
Chairman.

CHARLES F. MILLS,
Secretary.

LELAND HOTEL, SPRINGFIELD, ILL.,
Tuesday, March 22, 1898, 11:30 a. m.

The Executive Committee met on the call of the chairman.

President Moore in the chair.

Present: Messrs. Moore, Dolton, Wilmarth, King, Beal and Secretary Mills.

The chair stated that the committee had been convened for the purpose of checking up the vouchers and auditing the accounts of the retiring Treasurer, Mr. T. W. Wilson.

A partial examination of the accounts of Mr. Wilson was then made, when,

Motion of Mr. Wilmarth was adopted that in the absence of endorsed warrants or vouchers showing the receipt of certain sums reported as paid by Mr. Wilson to the officers of County Farmers' Institutes, and amounting to \$2,237.01, that the committee ask for further time for completing the work of auditing the accounts of Treasurer Wilson.

Motion adopted that the retiring Treasurer be requested to file with this committee vouchers showing the payment of the several sums covered by said \$2,237.01.

Adjourned subject to the call of the chair.

AMOS F. MOORE,
Chairman.

CHARLES F. MILLS,
Secretary.

LELAND HOTEL,
SPRINGFIELD, Wednesday, March 23, 1898.

The Executive Committee met at 9 o'clock a. m. on the call of Chairman Moore.

Present: Beal, Dolton, King, Moore, Wilmarth and Secretary Mills.

The Chairman stated that the committee had been called together for the purpose of auditing claims and transacting any other business.

Claims against the Illinois Farmers' Institute were then considered, approved and ordered paid as follows:

To the Board of Directors, Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants, for the following amounts, viz.:

Illinois State Register.....	\$40 25
Clay County Institute	38 51
Effingham County Institute	50 00
L. N. Beal	21 00
G. A. Wilmarth.....	12 16
Alvin Beal.....	5 00
Treasurer Effingham County Institute.....	10 25
Pike	50 00
Marion	50 00
DeWitt	50 00
Henderson	39 94
McLean	50 00
Edgar	15 30
Greene	50 00
McHenry	50 00
Richland	20 00
Perry	49 73
Grundy	45 35
Woodford	50 00
Clinton	36 90
Richland	50 00
Jasper	50 00
Cumberland	36 58
Christian	50 00
Edgar	47 24
Warren	46 00
Lawrence	41 50
Clark	18 40
Kendall	42 50
Charles Dolton.....	10 50
S. Noble King.....	21 85
G. A. Wilmarth.....	20 00
Treasurer Cook County Institute.....	50 00

Respectfully submitted,

G. A. WILMARTH,
CHARLES H. DOLTON,
L. N. BEAL,
S. NOBLE KING,
A. F. MOORE.

To the Board of Directors, Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same, and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants, for the following amounts, viz.:

A. A. K. Sawyer.....	38 86
Jonathan Periam.....	7 50
J. H. Coolidge.....	13 08
Oliver Wilson.....	11 79
F. C. Rossiter.....	15 05
Treasurer Cook County.....	12 54
L. Treasurer Woodford County.....	20 00
.....	2 80
.....	20 00
.....	3 00
.....	13 52
.....	9 45
.....	17 25
.....	17 70
.....	24 40
.....	13 20
e.	6 85
.....	2 10
.....	3 66
.....	24 44
ity Institute.....	20 00
.....	6 25
.....	28 29
.....	50 00
.....	4 18
.....	10 42
.....	6 77
.....	5 50
.....	12 09
	\$390 09

Respectfully submitted,

G. A. WILMARTH,
S. NOBLE KING,
L. N. BEAL,
AMOS F. MOORE,
CHARLES H. DOLTON.

March 23, 1898.

On motion of Mr. Wilmarth the following resolution was adopted:

WHEREAS, There is a widespread interest in the growing of sugar beets in various parts of the State, and

WHEREAS, There is a general desire for more information on the subject of cultivating beets on the various soils in different sections of the State, and

WHEREAS, An exhibit of sugar beets at the Illinois State Fair will call marked attention to this industry and increase the interest in growing beets and the manufacture of sugar therefrom, therefore be it

Resolved, That the Executive Committee of the Illinois Farmers' Institute request the officers of the Illinois State Fair to offer liberal premiums for exhibits of sugar beets at the coming Fair, each competitor to grow not less than one quarter of an acre of sugar beets.

Resolved, That it is suggested that the extent of the yield and the per cent of the sugar in the beets be taken into consideration in making the award.

Resolved, That the County Farmers' Institutes in Illinois be and are hereby requested to encourage the farmers in their respective counties to compete for such premiums as may be offered for the sugar beets by the State Board of Agriculture.

Resolved, That a copy of the foregoing resolutions be sent to the Secretary of the Illinois State Fair.

Motion of Mr. Wilmarth adopted that the bill of Mr. Alvin C. Beal for \$5.00, for expenses incurred in attending the Marion County Farmers' Institute, be approved and ordered paid.

Adjourned to 1:30 o'clock p. m.

AFTERNOON SESSION.

LELAND HOTEL, SPRINGFIELD,
Wednesday, March 23, 1898.

The Executive Committee met at 1:30 o'clock p. m. as per adjournment.

President Moore in the chair.

Present: Beal, Dolton, King, Moore, Wilmarth and Secretary Mills.

Motion of Mr. Beal adopted, that the Secretary obtain for each member of the Board a rubber stamp with name, postoffice and district of each director for use in stamping reports and other papers used in connection with the work of the Illinois Farmers' Institute.

Motion of Mr. Beal adopted, that the Secretary be instructed to publish in the annual report of the Illinois Farmers' Institute in connection with the reports of County Farmers' Institutes the portraits of the president in charge of the meeting for which said report is made.

The committee proceeded to consider the matter of speakers for County Farmers' Institutes, but took no action.

Adjourned subject to the call of the Chair.

AMOS F. MOORE,
Chairman.

CHARLES F. MILLS,
Secretary.

STATE HOUSE,
ROOMS ILLINOIS FARMERS' INSTITUTE,
SPRINGFIELD, Wednesday May 11, 1898.

The Executive Committee met on the call of the Chair.

Called to order by Chairman Moore.

Present: Messrs. Beal, Dolton, King, Moore, Wilmarth and Secretary Mills.

The following call for the meeting was read:

SECRETARY'S OFFICE,
SPRINGFIELD, ILL., May 2, 1898.

Hon. S. Noble King, Bloomington, Illinois:

DEAR SIR:—Hon. Amos F. Moore, Chairman of the Executive Committee of the Illinois Farmers' Institute, has called a meeting of said committee to be held in the State House Wednesday afternoon, May 11, 1898, at 1:30 o'clock.

You are requested to be present at the meeting appointed by President Moore for the time and place noted above.

Yours very truly,

CHARLES F. MILLS.

The minutes of the meetings of the Executive Committee held March 2, March 3, March 22 and 23, 1898, were read and on motion of Mr. Wilmarth approved.

On motion of Mr. Wilmarth the committee took a recess for one hour.

The committee met after recess with all members of the committee present.

The President stated that the committee had been convened for the purpose of considering the bond of the Treasurer-elect, checking up the accounts of the retiring Treasurer and making a transfer of the funds.

The following copy of the bond of Treasurer-elect A. P. Grout was presented by the Chairman with copy of letter of inquiry to the probate judge of Scott county with his endorsement as to the financial standing of the sureties:

Know all men by these presents, that A. P. Grout, as principal, and J. V. Carpenter, C. H. Condit and William Neat, as sureties, of the County of Scott and State of Illinois, are held and firmly bound unto the Illinois Farmers' Institute, a corporation existing under the laws of the State of Illinois, in the sum of Fifteen Thousand Dollars, good and lawful money of the United States of America, to be paid to the said Illinois Farmers' Institute; for which payment, well and truly to be made, they bind themselves and their heirs, executors and administrators, jointly and severally, firmly by these presents.

Sealed with their seal, and dated this 31st day of March, in the year of our Lord one thousand eight hundred and ninety-eight.

The condition of this obligation is such, that said A. P. Grout shall faithfully and honestly perform the duties of Treasurer of said Illinois Farmers' Institute and safely keep all money and other property entrusted to his care as Treasurer, paying the same out when ordered by the Board of Directors of the Illinois Farmers' Institute, attested by the President and Secretary thereof, and shall turn over to his successor in office all money and other property remaining in his hands, then this obligation to be void; otherwise to remain in full force and virtue.

Sealed and delivered in the presence of Alonzo Ellis.

A. P. GROUT,	[SEAL]
JOS. V. CARPENTER,	[SEAL]
C. H. CONDIT,	[SEAL]
WILLIAM NEAT.	[SEAL]

POLO, ILL., May 4, 1898.

Probate Judge of Scott County, Winchester, Illinois.

HONORED SIR:—I wish to find out the financial standing of some parties who are on the bond of A. P. Grout, as sureties, viz.: J. V. Carpenter, C. H. Condit, Wm. Neat. As these parties are not rated, I know of no other way to find out, only through you.

Will you oblige be by letting me know at once?

Yours respectfully,

AMOS F. MOORE,
President Illinois Farmers' Institute.

REPORT OF JAMES CALLAN, CO. JUDGE.

J. V. Carpenter is worth \$200,000 or more.

Chas. H. Condit is worth \$25,000 to \$50,000.

Wm. Neat is worth over \$100,000.

Yours, etc.,

JAMES CALLAN,
Co. Judge.

Motion of Mr. King adopted, that the bond of Treasurer Grout be returned to said gentleman with request that the sureties make affidavit to their signatures before a notary public and that they hold in fee simple unincumbered real estate to the value of at least thirty thousand dollars.

Motion of Mr. Wilmarth adopted, that the directors of the respective districts be requested to complete early arrangements for the holding of Congressional Institute meetings in their several districts, said meeting to be known as the round up meeting for each of the districts as well as the County Institute meeting for the county in which the same may be held, and further, that said round up meetings be rotated in the several counties in each district and that the time and place of the Congressional Institute be determined by the respective directors.

Motion of Mr. Wilmarth adopted, that the Executive Committee recommend that an appropriation of \$20.00 be made for speakers employed at each County Institute for the ensuing Institute season, said funds to be available only for speakers residing outside of the county in which the meeting is held.

Motion of Mr. Wilmarth adopted, that the Executive Committee recommend that an appropriation of \$50.00 be made to assist the County Institute at which the Congressional Institute meeting is held, in lieu of the \$20.00 to be appropriated for County Institute speakers.

Motion of Mr. Wilmarth adopted, that Mr. Oliver Wilson, ex-Superintendent, be directed to turn over to President Moore, the type-writer, correspondence and all other property in his hands pertaining to the office of Superintendent.

The following report of bills approved was adopted and ordered placed upon the records:

To the Board of Directors, Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts, viz.:

Treasurer Ford	County Institute.	\$6 50
White		20 00
Ogle		50 00
Franklin		20 00
R. M. Bell, State Speaker		4 38
Treasurer Adams	County Institute.	20 00
Macoupin		19 60
Woodford		7 03
Clay		20 00
Edwards		20 00
Bureau		5 39
Cass		13 75
DeKalb		5 75
Cass		50 00
Franklin		49 47
DuPage		50 00
White		50 00
Hamilton		19 45
Macoupin		50 00
Adams		50 00
JoDavie		50 00

Leland Hotel.....	\$8 25
G. A. Wilmarth	3 00
Ralph Allen	8 65
Pacific Express	7 40
Champaign Gazette	3 50
W. C. Latta.....	4 68
Benj. Weaver	100 00
Adams Express Co	2 75
U. S. Express Co	2 70
American Express Co	4 05
S. Noble King.....	9 85
L. N. Beal	17 00
Charles H. Dolton	9 90
A. F. Moore.....	22 57
Treasurer McLean County Institute	20 00
G. A. Wilmarth	20 00

AMOS F. MOORE,
CHARLES H. DOLTON,
G. A. WILMARTH,
L. N. BEAL,
S. NOBLE KING.

On motion adjourned to 8 o'clock p. m.

EVENING SESSION.

LELAND HOTEL,
SPRINGFIELD, May 11, 1898.

The Executive Committee met at 8 o'clock p. m.

Mr. Moore in the chair.

Present—Miller, Beal, Dolton, King, Moore, Wilmarth and Secretary Mills.

Motion by Mr. King adopted that the Executive Committee when it adjourns next meet on Tuesday, May 24, 1898, at 1:30 o'clock p. m., in the rooms of the State Institute in the State House.

Motion of Mr. Wilmarth adopted that the Executive Committee recommend as a condition of receiving \$20.00 by County Institutes for speakers that the officials of County Institutes secure said speakers through the director of their respective districts.

Mr. Wilmarth called to the chair.

Motion of Mr. Beal adopted that the Secretary be directed to request the Presidents of County Institutes to forward papers read at their respective meetings considered worthy of a place in the annual report of the Illinois Farmers' Institute and that said papers should be transmitted through the directors of the several Congressional districts on or before May 20, 1898.

Motion by Mr. King adopted that the Secretary have printed 200 letter heads for each of the directors of the several districts and a sufficient quantity for the use of the officers.

Adjourned to meet at the State House at 8 o'clock a. m. tomorrow.

STATE HOUSE, ROOMS ILLINOIS FARMERS' INSTITUTE,
 SPRINGFIELD, Thursday May 12, 1898.

Chairman Moore in the chair.

Present—Messrs. Beal, Dolton, King, Moore, Wilmarth and Mills.

Motion of Mr. Wilmarth adopted that the chair appoint a standing Committee on Library.

The chair appointed Library Committee consisting of Messrs. Wilmarth, Beal, Davenport, Mills and Periam.

The chair called attention to the delay in the receipt of the stenographer's report of the annual meeting held in Champaign in February and presented the same for the approval of the committee.

On motion of Mr. Wilmarth the stenograph report made by Mr. Ben Werner was accepted and approved and warrant ordered for \$100 in payment for same.

Motion of Mr. Wilmarth adopted that the claims of the Grundy County Institute for \$45.35 instead of \$35.35 be allowed as per itemized statement of expenses filed.

Adjourned to meet May 24, 1898, at 1:30 p. m. in the State House.

AMOS F. MOORE,

Chairman.

CHARLES F. MILLS,

Secretary.

STATE HOUSE, SPRINGFIELD,

Tuesday, May 24, 1898.

The Executive Committee met in the office of the Illinois Farmers' Institute, in the State House, as per adjournment, at 1:30 p. m.

Mr. Moore in the chair.

Present: Beal, Dolton, King, Moore, Wilmarth and Secretary Mills.

Motion of Mr. Wilmarth adopted that \$7.50 deducted from the claim of the Kendall County Farmers' Institute by error be allowed.

The chairman presented the following bond of the Treasurer, A. P. Grout:

Know all men by these presents, that A. P. Grout, as principal, and J. V. Carpenter, C. H. Condit and William Neat, as securities, of the county of Scott and State of Illinois, are held and firmly bound unto the Illinois Farmers' Institute, a corporation existing under the laws of the State of Illinois, in the sum of fifteen thousand dollars, good and lawful money of the United States of America, to be paid to the said Illinois Farmers' Institute; for which payment, well and truly to be made, they bind themselves and their heirs, executors and administrators, jointly and severally, firmly by these presents.

Sealed with their seal, and dated this 31st day of March, in the year of our Lord one thousand eight hundred and ninety-eight.

The condition of this obligation is such, that if said A. P. Grout shall faith-

fully and honestly perform the duties of Treasurer of said Illinois Farmers' Institute and safely keep all money and other property entrusted to his care as Treasurer, paying the same out when ordered by the Board of Directors of the Illinois Farmers' Institute, attested by the President and Secretary thereof, and shall turn over to his successor in office all money and other property remaining in his hands, then this obligation to be void; otherwise to remain in full force and virtue.

Sealed and delivered in the presence of Alonzo Ellis.

A. P. GROUT,	[SEAL]
JOS. V. CARPENTER,	[SEAL]
C. H. CONDIT,	[SEAL]
WILLIAM NEAT,	[SEAL]

STATE OF ILLINOIS, } ss.
SCOTT COUNTY. }

We, A. P. Grout, J. V. Carpenter, C. H. Condit and Wm. Neat, being first duly sworn on oath state that we are the same persons who signed the foregoing bond of A. P. Grout to the Illinois Farmers' Institute, a corporation existing under the laws of the State of Illinois, for \$15,000, and dated March 31st, 1898, and that we hold in our own right, unincumbered real estate in fee simple, to the value of at least \$30,000.

A. P. GROUT,
JOS. V. CARPENTER,
C. H. CONDIT,
WILLIAM NEAT.

Subscribed and sworn to before me this 20th day of May, 1898.

[SEAL)

ALONZO ELLIS,

Notary Public.

Motion of Mr. Wilmarth adopted that the matter of legality as to the form and construction of the bond of Mr. Grout be referred to the Attorney General for an opinion, and that a committee of three be appointed to present the matter to the Attorney General.

The chair appointed as said committee Messrs. Wilmarth, Dolton and King.

The committee, after a conference with the Attorney General, reported that said officer stated that a certificate similar to that attached to a deed should have been appended to the bond, showing that the sureties had appeared personally before the notary and duly acknowledged their signatures. He further stated that the form and wording of the bond was sufficient to enable the Illinois Farmers' Institute to collect the amount specified therein, after first proving the signatures of the sureties.

Mr. Wilmarth moved that the bond be received and approved.

Mr. Dolton demanded the yeas and nays.

The yeas and nays were ordered.

The question was taken, and there were yeas, five; nays, none; not voting none, as follows:

Yeas: Beal, Dolton, King, Moore and Wilmarth—5.

So the motion of Mr. Wilmarth to receive and approve the bond was agreed to

Motion of Mr. Wilmarth adopted that a rising vote of thanks be extended to the retiring Treasurer, T. W. Wilson, for his courteous and faithful discharge of his duties as Treasurer.

Mr. Beal introduced the following resolution:

Resolved, That it is the sense of the members of the Executive Committee of the Illinois Farmers' Institute that the committee on by-laws of said organization recommend no change in the present code of by-laws of this organization.

Motion of Mr. Dolton was adopted, that the resolution be laid on the table.

Mr. T W. Wilson, the retiring Treasurer, made the following statement showing the receipts and disbursements of all funds passing through his hands since the State appropriations first became available for the Illinois Farmers' Institute:

TREASURER'S REPORT.

Thos. W. Wilson, Treasurer, in account with the Illinois Farmers' Institute, May 24, 1898.

DR.		
To balance on hand March 22.....	\$2,809 85	
To amount received from State Treasurer on account of County Farmers' Institutes	1,493 17	\$4,303 02
CR.		
By amount paid out as per order of Board of Directors (State Institutes).....	\$1,248 31	
By amount paid to County Farmers' Institutes.....	1,453 23	
By balance in treasury.....	1,601 48	\$4,303 02

THOS. W. WILSON.

Name.	Amount.
A. W. Hunter.....	\$20 00
J. A. Mount.....	5 00
Dr. C. C. Mills.....	4 30
Mrs. H. F. Carriel.....	6 24
George McKerrow.....	3 25
Treasurer Boone County Institute	15 00
Mrs. L. G. Chapman	10 91
Treasurer Randolph County Institute.....	20 00
D. H. Shank.....	3 82
Treasurer Marion County Institute.....	20 00
Menard	19 69
Washington "	20 00
Oliver Wilson.....	11 78
J. H. Coolidge.....	13 08
Amos F. Moore.....	12 54
D. H. Shank.....	13 52
.....	9 45
G. A. Wilmarth.....	12 15
L. N. Beal.....	21 00
Charles H. Dolton.....	10 50
S. Noble King.....	21 35
G. A. Wilmarth.....	20 00
Alvin C. Beal.....	5 00
Illinois State Register.....	40 25
Charles F. Mills.....	28 29
A. A. K. Sawyer.....	8 36
Adams Express Co.....	24 29
.....	2 10
Pacific Express Co.....	3 66
American Express Co.....	24 44
Jonathan Periam.....	7 50
F. C. Rossiter.....	15 05

Name.	Amount.
Treasurer Cook County Institute.....	\$20 00
L. H. Griffith.....	2 50
Treasurer Woodford County Institute.....	20 00
C. J. Lindemann.....	3 00
J. G. Haverfield.....	17 25
George Arnott.....	17 70
Treasurer Edwards County Institute.....	13 20
A. G. Judd.....	20 00
T. W. Wilson.....	6 26
G. W. Dean.....	4 18
Frank I. Mann.....	10 42
A. P. Grout.....	6 77
Eugene Davenport.....	5 50
Treasurer Cook County Institute.....	12 09
Clay.....	50 00
Effingham.....	38 51
Effingham.....	50 00
Pike.....	10 25
Marion.....	50 00
DeWitt.....	50 00
McLean.....	50 00
Edwards.....	15 30
Greene.....	50 00
McHenry.....	50 00
Richland.....	20 00
Perry.....	49 73
Woodford.....	50 00
Clinton.....	36 90
Richland.....	50 00
Jasper.....	50 00
Cumberland.....	36 58
Christian.....	50 00
Edgar.....	47 24
Warren.....	46 00
Lawrence.....	41 50
Clark.....	18 40
Kendall.....	42 50
Charles F. Mills.....	100 00
Fred H. Rankin.....	7 25
Fred Hatch.....	6 85
Treasurer Grundy County Institute.....	45 35
Ford.....	6 50
White.....	20 00
Franklin.....	20 00
R. M. Bell.....	4 38
Treasurer Adams County Institute.....	20 00
Macoupin.....	19 60
Woodford.....	7 03
Clay.....	20 00
Charles H. Dolton.....	9 90
Amos F. Moore.....	22 57
G. A. Wilmarth.....	3 00
S. N. King.....	20 00
L. N. Beal.....	9 85
Treasurer Bureau County Institute.....	17 00
Cass.....	5 39
DeKalb.....	13 75
DeKalb.....	5 75
DeKalb.....	50 00
Cass.....	49 47
Franklin.....	50 00
DuPage.....	50 00
White.....	50 00
Adams.....	50 00
Ralph Allen.....	8 65
The Gazette, Champaign, Ill.....	3 50
W. C. Latta.....	4 68
Benj. Weaver.....	100 00
Adams Express Co.....	2 75
American Express Co.....	4 05
Treasurer Ogle County Institute.....	50 00
Hamilton.....	19 45
Macoupin.....	50 00
JoDavieess.....	50 00
Pacific Express Co.....	7 40
United States Express Co.....	2 70
	\$2,701 54

TREASURER'S REPORT.

Thos. W. Wilson, Treasurer, in account with the Illinois Farmers' Institute,
May 24, 1898.

July 1897	24	DR.		
		To amount received from State Treasurer on account of appropriation to State Farmers' Institute	\$7,500 00	
		To amount received from State Treasurer on account of appropriation for County Farmers' Institutes for year ending June 30, 1898.....	3,730 18	
				\$11,230 18
		CR.		
		By amount paid on order of Board of Directors as per list of warrants attached	\$5,938 46	
		By amount paid in aid of County Farmers' Institutes as per list attached.....	3,690 24	
		By balance in hands of Treasurer.....	1,601 48	\$11,230 18

The above report is true to the best of my knowledge and belief.

THOS. W. WILSON.

Personally appeared before me, this 24th day of May, 1898, Thos. W. Wilson, who made oath to the above.

W. H. MILLER,

Notary Public.

[SEAL]

Motion of Mr. Wilmarth adopted, that the final report of the retiring Treasurer, Mr. T. W. Wilson, be received and ordered spread upon the record and that said retiring Treasurer be instructed to pay over to his successor in office, Mr. A. P. Grout, the balance in his hands as shown by his final statement, amounting to \$1,601.48.

Motion of Mr. Wilmarth adopted, that a duplicate of warrant 221 for \$39.94 be drawn in favor of the Treasurer of the Henderson County Farmers' Institute to replace the original reported as lost by the treasurer, J. W. Rankin.

Motion of Mr. Wilmarth adopted, that a warrant for \$118.50 be drawn on the Treasurer, payable to the order of the retiring Treasurer, Mr. T. W. Wilson, the same being a commission of 2 per cent on disbursements made to date by said Wilson and amounting to \$5,928.36.

Motion of Mr. Beal adopted, that a warrant for \$10 be drawn on the Treasurer for \$10 in favor of Henry McKean for services as janitor to this date.

Motion of Mr. Wilmarth adopted, that the Secretary be instructed to print 5,000 roster cards containing the names of the directors, standing committees, etc., and that 200 of said cards be sent to each director.

Mr. Beal moved that Messrs. Wilmarth and Kimzey be appointed a committee to coöperate with the directors of the 14th and 22d districts in the work of completing the organization of County Farmers' Institutes in said districts, and that vouchers for expenses incurred in the discharge of said duties will be recommended for payment

Mr. Dolton demanded the yeas and nays.

The yeas and nays were ordered.

The question was taken and there were yeas five, nays none, not voting none, as follows:

Yeas—Beal, Dolton, King, Moore and Wilmarth.

So the motion of Mr. Beal was agreed to.

The following resolution introduced by Mr. Wilmarth was adopted:

Resolved, That a committee of three be appointed to arrange for a convention of delegates of County Farmers' Institutes to be held in Springfield Wednesday evening (September 28) of the week of the State Fair. Said convention to be conducted on the plan of an open parliament for the discussion of topics of especial interest to the officers of County Farmers' Institute and include such questions as

The arrangement of Institute programs.

Advertising County Institutes.

Finances of County Institutes.

New features of County Institutes.

How to interest the youth in County Institutes.

Women's work in County Institutes.

The chair appointed as said committee Messrs. Mills, King and Dean.

Adjourned to meet at the Leland Hotel at 8 o'clock p. m.

EVENING SESSION.

The Executive Committee met at the Leland Hotel at 8 o'clock p. m. as per adjournment.

Mr. Moore in the chair.

Present: Beal, Dolton, King, Moore, Wilmarth and Secretary Mills.

Motion of Mr. Wilmarth adopted that Messrs. Dolton and King be appointed a committee to secure a suitable room, in a building on the State Fair grounds, for the use of the Illinois Farmers' Institute during the week of the coming State Fair.

Claims were taken up, approved and the following report adopted for presentation to the Board of Directors:

To the Board of Directors, Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment for said vouchers be drawn to the order of the respective claimants for the following amounts, viz.:

Charles H. Dolton	\$9 20
Americau Express Co.....	4 05
Treasurer Kendall County Farmers' Institute	7 50
Amos. F. Moore.....	19 54
S. Noble King.....	12 45
The Ward Carter Co.....	3 00
Charles F. Mills.....	100 00
Illinois State Register.....	13 00
O. S. Cohoon to treasurer Boone County Farmers' Institute.....	6 13
Charles F. Mills.....	100 00
L. N. Beal	16 50
T. W. Wilson.....	118 56
G. A. Wilmarth	20 00
Charles F. Mills.....	100 00
Henry McKean.....	10 00

AMOS F. MOORE,
CHARLES H. DOLTON,
L. N. BEAL,
S. NOBLE KING,
G. A. WILMARTE.

Motion of Mr. Wilmarth adopted that the Secretary correspond with directors, presidents of County Institutes and others and request a list of names of capable speakers residing in the State for service in connection with County Farmers' Institute meetings; said list of proposed speakers to be submitted to the standing committee on speakers.

Motion of Mr. King adopted that the chair appoint a committee of three to procure a suitable library case for the office of the Illinois Farmers' Institute.

The chair appointed as said committee Messrs. Wilmarth, Beal and Mills.

The chair announced the following standing committees, which were approved and ordered spread upon the record:

Legislation—Grout, Dunlap, Dean, Dolton, King, Mills and Moore.

Program State Institute Meeting—Mills, Davenport, Inglis, Rositer and Moore.

Exhibit State Institute Meeting—Beal, Gurler, Dunlap, Shank and Moore.

Speakers County Farmers' Institutes—Dean, Dunlap, Davenport, Mills, Moore.

Special Features for Improving Meetings of County Institutes—Kimsey, Bartlett, Coolidge, Lindemann, Mann, Pearce, Periam, Moore.

Systematizing the Work of County Institutes—Wilson, Prindle, Stewart, Sawyer, Steenberg, Moore.

Library State Institute—Wilmarth, Beal, Davenport, Periam, Mills.

Adjourned subject to the call of the chair.

AMOS F. MOORE,
Chairman.
CHARLES F. MILLS,
Secretary.

HORSE DEPARTMENT.

THE UP-TO-DATE HORSE.

[By F. J. Berry, Union Stock Yards, Chicago. Read before the Will County Farmers' Institute.

The up-to-date horse and export demand is the subject of discussion before us today. I will endeavor to show you what a market horse of the present time is, and the difference of a horse of today and five years ago; also to inform you on the export demand, and how to produce and fit your horses for the market.

Horses have sold at such ruinous prices that it discouraged horsemen. A large part of them went out of the business, breeding came to a standstill, and for the past few years there have been but very few colts raised. At the same time the consumption has been going on, until the American supply of 16,000,000 horses in 1891 has been reduced two and three millions at the present time.

Go into any section of our best horse raising country, and you will not find 10 per cent of the horses on hand which will be good enough or large enough to meet the demands of the foreign market.

The former system of breeding horses for the market would prove a failure at this time, as then a small and smooth horse was very saleable. Plain and ordinary horses brought all they were worth, but at the present time small and ordinary horses are of but very little value. There is no demand any where for them. They are a thing of the past.

We already have a very strong demand for good horses, and prices have advanced very much. The present situation shows every indication of an advance in price for good horses for many years to come, and it will not be long before the good classes of horses will be as high as they ever were. It is believed by our best judges that a great famine of the saleable class of horses will be upon us in a few years at the most.

The foreign demand is becoming the leading feature and life of our Chicago market, which is headquarters for export buyers. From twenty to forty exporters can be found in this market any day in the year. The demand commenced in the year 1893, and has had a rapid growth until the year 1896, 35,000 horses were sold, and during the past year 1897, fully 50,000 horses, including mules were sold. The demand is increasing. Foreign markets, including England, Ireland, Belgium, Scotland, Germany, France and Mexico are interested. Our present correspondence would indicate fully one-third increase for the coming year. If Americans will have an eye to their own interests, they will commence breeding the very best grades of horses, and as extensively as possible.

Now I will give you a description of the five different classes, covering the export as well as the domestic demand:

Class No. 1—Drivers and coachers, which must be of good color, well bred. Wilkes preferred, from 15.3 to 16½ hands, with fine heads and necks, plenty of bone and substance, short back, smooth hip, round barrel, must be a good traveler, and if some speed all the better. This class has advanced very much in price, and are worth very nearly double the price they sold at two

years ago. They range in price from \$100 to \$300. Some very rare specimens of this class have sold at auction in our Chicago market the first week in January as high as \$450. In case of a lack of Hambletonian stallions with size and quality to produce this class, the French coach horse has been crossed with the trotting bred mares with extremely favorable results. It is the opinion of the best breeders and horsemen that we will have to cross our good trotting bred mares with the French coach horse in order to produce the light harness horse, large enough and combined with quality to meet the coach horse demand. It is believed that this cross of breeding will not only produce a fixed type of a coach horse that shall possess all size and quality, action and style, and still retain the road qualities required, as every light harness horse should be well bred in order to stand the wear and tear and hard work of pavements.

Class No. 2—A cab horse, rather blocky, weighing 1,100 pounds and standing $15\frac{1}{4}$ to $15\frac{1}{2}$ hands, smooth made with bone and substance, fair traveler, price about \$75. This class of horses is a very saleable one for many purposes, but they are always plenty on our market, and too plenty to be profitable horses to raise. At the same time in breeding horses the breeder always will get some of this class. This is the smallest class that ever should be bred, as there is no demand for anything smaller except at ruinous prices.

Class No. 3—A bus horse which is a blocky, smooth made horse, must shape himself well in harness, standing $15\frac{1}{4}$ to 16 hands, plenty of bone and substance, fair traveler and fair action, weighing from 1,250 to 1,400 pounds. This class of horses includes the quality of not only an omnibus horse, but of an express and general purpose horse. The English use the more blocky, lower set ones for busses, while the larger ones are used for express and general purposes. This class of horses is in the strongest demand in all American and foreign markets, and sells from \$80 to \$125, and can be produced best by a Percheron horse crossed with a smaller mare that has some breeding and good style, and action and road qualities.

Class No. 4—The draft horse, which should weigh from 1,500 to 1,800 pounds, blocky made, heavy boned with smooth finish, good quality and action, and a first-class draft horse in every respect. The present price is from \$100 to \$250, and the best specimens sell as high as \$300. This class is one of the most saleable, and will find ready sale in domestic and foreign markets, and can be produced from the best heavy draft mare of good quality crossed with the best heavy draft horse of high quality, regardless of what breeding of a draft he might be as long as he possesses all the qualities of a draft horse.

Class No. 5—The American trotter, in all cases must be a high bred trotting horse with good bone and substance, high finish, good action and disposition, and the more speed he has the higher price he will bring, ranging in price from \$200 to \$5,000, according to his quality, size and speed.

All horses for export must be perfectly sound and without blemish. I would suggest that influence be brought to bear that some action may be taken by our government in regard to the importation of Stallions, and that they should be required to pass a close inspection and should be up to a certain grade and be perfectly sound.

The farmer or breeder who is up to date does not want to undertake to produce all classes of horses. He wants to select one class that his circumstances and breeding stock is adapted to produce. The classes of horses I would more particularly recommend would be the best quality of heavy draft, or the highest class of light harness or coach horse.

The farmer says we have no fixed type of a coach horse, and what shall we breed that we may produce this class to a certainty? This is a question that has been asked for years, and without a satisfactory answer. I will now endeavor to answer the question.

Had proper care been used in breeding the American trotter with size, we might have had a fixed type of a coach horse of the highest class. I believe there can be a fixed type of a coach horse produced, by first crossing our best types of trotting bred mares, with high quality and size, with the highest

class of the French coach horse, and after getting the size and quality, then breed back to the American trotter, still retaining size, quality and action, and when you have this, the more trotting blood, the higher the class of horse. I would only advise crossing the coach horse in case of a scarcity of the proper kind of trotting bred stallions, and I believe if proper judgment is used and care taken, that a fixed type of a coach horse can be produced, that a breeder can breed a horse that shall be up to the requirements of the market to a certainty.

THE DRAFT AND ROAD HORSE.

By Frank S. Gorton. Read before the DuPage County Farmers' Institute.

Agreeable to your request I write a paper on "The Rearing, Care and Preparation for the sale of the following class of horses: Draft horses and horses of all work—roadsters." I wish to state that I have had no experience whatever in rearing draft horses, my attention having been given to the American trotting horse. It costs no more to raise a good breed of horses than it does a poor one, and there is no economy in the old western idea practiced by some that horses should be allowed to rough it. I do not mean by this that they should be petted, but they should not be starved.

To begin with, young colts should have all of the oats they can eat as soon as they are old enough. There should be a manger fenced off in the pasture so arranged that the colts only can get in, that is, the openings to be so small as to exclude the mares. That manger should be kept full of oats at all times. The colts will not eat too much. They are like children, they want a bite between meals. Then it takes but little trouble to wean them; they are in good condition and they have already been taught to eat. They should have oats before them all the next winter, and of course, hay, corn fodder, carrots, or whatever the owner thinks best to feed them by way of a change. The colts are then strong and less liable to disease; and some raisers of fancy stock continue feeding this way during the summer of the yearling form, but I believe it is better when the grass gets good to take grain away from them entirely as long as the pasture is good during the summer. As to their breaking and handling, the farmer knows when he has the most time for that; but I am merely getting the colt well started. In the winter I would permit all the stock to run out for a while during each day, no matter how cold the weather might be; ventilate the barn, clean out the stalls, open the doors and windows and let the foul air blow out. The barn will soon get warm when the stock is in and the doors are closed. This is the "free-animal system of heating." Some farmers have an idea when the wind blows through, the horses are going to get cold. They do not consider that the foul air is more injurious than the cold.

Some years ago American breeders imported very largely to grade up the American stock of horses, particularly the draft and carriage types. The result was that from the increase in this country the American market was overstocked. With the advent of the bicycle the whole world stopped breeding horses to a great extent. The result has been a shortage of fine horses. Ordinary plugs were always too numerous and were never of any particular value, but fine park or carriage horses command a higher price today than for many years past. The trotting horse boom carried prices way beyond any reason. The result was that a two-year-old trotting stallion sold for \$125,000, and a three-year-old trotting stallion sold for \$105,000, and sales from \$30,000 to \$50,000 were very numerous. Naturally such prices could not hold. They should never have been reached; but now prices are getting back to where the breeder can make money. Stallion fees are reasonable, and with the shortage of horses abroad and the large surplus in the United States, naturally it has attracted buyers in this country. The bicycle is all right as far as it goes, but it is a pleasant day conveyance, not made for general traffic, not very well for a muddy day, and not at all practicable for winter. Imagine what the result would be if a person attempted to go through a snow drift on a bicycle. That is the time when the old reliable horse comes into use. The

electric street car has had more to do with cheapening the price of ordinary horses than any other late invention; but that is not the kind of a horse I am recommending you to breed. I recommend a higher type.

The exportation of horses from this country to European countries has been increasing each year for the past ten years, and the importation of horses from these countries to the United States has decreased, and to a much greater extent than the exportation has increased.

During the month of November, 1897, (the latest period for which the official figures have been compiled by the treasury department) horses were imported to this country to the number of 212 at a valuation of \$19,000; against horses to the number of 420 at a valuation of \$34,232 for the month of October, 1896; total for the eleven months of the year 1897, 5,834 horses, at a valuation of \$478,192, as against 7,783 horses at a valuation of \$487,605 for the ten months, including October, 1896. There were exported in the month of November, 1897, 2,869 at a valuation of \$313,377 as against 1,502 horses at a valuation of \$231,478 for the month of October, 1896. Total for the eleven months in 1897, 42,338 horses at a valuation of \$5,180,000 against 25,840 horses at a valuation of \$3,282,463 for 1896.

This gives you an idea of the foreign trade. We import less and export more; and the horses imported and exported, as you can see by the valuation, of the highest grade. These figures, of course, include all horses, thoroughbreds, trotters, draft horses, carriage horses, and general purpose horses. The foreigner who comes here to buy horses wants to buy the best. Naturally he wants to buy as cheap as possible, but he is willing to pay the value. In this matter I have had a little experience, having sold a few for export, but each one was a perfect horse. There was no "outs" about them in any way. They were perfectly sound and they were all trotters. I would not advise the DuPage county farmer to start in and breed or raise trotting horses for racing purposes. He might become too much interested in the speed of his young ones at the expense of the corn crop; but standard trotting bred mares can be bought today as cheap as any other horses. Select such as would do for farm work. When the farmer hauls a load of milk to the station he could do it a little quicker than with a pair of draft horses, and it wouldn't hurt them to take his empty wagon home in less time than with the other team; and judging by the hour that the average farmer usually rises, I take it that time is of some value to him. This is an age of speed. None of our farmers from choice take the accommodation train into the city.

In reading what I have written I do not think that I have covered what you asked me to write about, but have only given you a few statistics on the importation and exportation of horses. This, however, shows that the horse business is not dead, and that good horses still have a value; and if the exportation of horses continues to increase as it has in 1897 over 1896, naturally our supply of desirable horses will soon be largely reduced, because some are used in this country and some die each year. The Chicago daily papers show the number of horses sold each day at the stock yards.

BREEDING AND RAISING HORSES.

By Robert Cummins, Crooked Creek, Ill. Read before the Jasper County Farmers Institute.

Although at the foot of the list, brother farmers, this is a subject we all ought to be interested in.

Optimists and pessimists have for several years wrangled over the future of the horse, for and against his retention as a beast of burden or a means of pleasure. According to the latter, the horse is doomed to sure and speedy extinction. In support of their blue tinted prognostications they pointed exultingly to the fact that horses were selling all the way from \$2.50 a head to say \$100, that the farmers had ceased breeding them, and nobody wanted them anyway.

In round numbers the horse stock of this country is about sixteen million head. Motor cars, bicycles and the like, which were counted on to kill off the horse, have probably put 10 per cent of the horses out of business, but the increase of population and wealth and the growing export trade have more than balanced this. Almost every state reports an increase in the number of horses in use on the streets of its cities and over its country roads, and, even better than that, the men who have all along been upholding the horse and his continuous claims can point to facts and figures which prove that the lowest ebb of the period of depression is over and that buyers are paying and are willing to pay higher prices than at any time since 1892. Local private dealers and such auctioneering firms as Van Tassel & Kearney, Tiss, Doerr & Carroll and W. D. Grant all tell the same tale—more buyers and better prices.

The one rift in the otherwise encouraging condition of affairs is that for all the immense number of horses this country possesses there is an absolute shortage in the one grade which brings the highest prices. Buying agents for local dealers, who used to in the olden times cover a hundred miles a day, and found plenty of likely horses, now scour the country and rake it with a fine tooth comb and think they are lucky to get one or two good horses per week.

During the dull times breeders have learned that something else is required in a horse than that he shall be an animal with four legs—one on each corner. The days of the \$5 cross-roads stallion are gone, everywhere that I read of, except in Jasper county, and there are a great many farmers in this county who see the necessity of improving their horses. There is one thing that our farmers, I think, are in need of and that is: Education on horse breeding—the kind of horses to raise and how to care for and fit them for market.

Now, gentlemen, there is no paper I know of that is as near an educator for farmers as the Breeders' Gazette. It only costs \$1 per year, weekly, in club rates. It treats on all kinds of stock—the care, management and marketing—and is full of good instructions on farming. Every farmer ought to take the Gazette; it also gives the market prices on all kinds of stock.

Any man that has ever been on the market can tell a good horse now when he sees it, and in the future only the good ones, no matter of what grade, whether for carriage or business, will go.

The local market is in a thoroughly healthy condition, but it will only pay good prices for demonstrated quality. The needs of European countries for cavalry mount and field artillery use will soon make heavy drafts on the range horses of the west, but beyond that the breeders have two markets right at their doors—for high class carriage and for heavy work horses. The Hackney, French Coach and other coach breeds combined with the native trotting stock should be able to furnish the former, and the Percheron, Clyde and Shire sires in the country ought to be able to supply the latter. All that is needed is for the farmer to take heart and go ahead and breed to the best all the time.

I will make this assertion: That if all of the light mares in this country were bred to recorded Hackney and Coach stallions and all of the heavy mares bred to pure recorded draft stallions of the different breeds we would have all the cheap southern horses then that there is any market for and we would have a great many more export horses that bring the best prices. The rapid development of our export horse trade is without a parallel. In 1893 we exported less than 3,000 horses; in 1894 the number increased to 5,250 head; in 1895 the export doubled the previous year and reached 13,950; in 1896 it again doubled and 28,450 horses were exported; this year has been no increase, the first six months only reaching 14,200, or half of last year's exports. As the supply of high class export horses is so reduced and the number of foreign buyers has increased with our increasing home demand for the better class of horses, prices will naturally advance.

England and Scotland take the great majority of our exports and still buy more from other countries. Germany is increasing the demand for American horses and last year took about 4,000 head. It takes 100,000 more from Russia and other countries to make up her deficit. If we only had the right kind,

we could supply Germany with 50,000 horses a year, and Great Britain and France each as many more, while our home demand will now require more of the better class of draft and coach horses as industrial and commercial prosperity develops.

Now, gentlemen, I have not much to say about the sporting horse of the country. We have the American trotter and the race horse that our farmers are breeding to. My judgment is that if farmers breed to trotters they ought to breed to the largest coach stallions with good bone and good action and a good individual and sound, because unsoundness is hereditary. A small horse, bad feet, crooked hocks, or a poor individual should be avoided. If we raise light harness horses they must have quality and size and be clear of blemishes if we expect to get anything for them.

Who ever heard of a horse buyer that would buy a race horse. There are good farmers breeding their plug mares to race horses, it matters not how bad blemished or old or broke down they are. Now, gentlemen, what I have got to say is, there is no object in view in such breeding. They don't get race horses nor drivers that will go on the market, and I don't think they are draft horses.

A word concerning the color of horses. It is generally known and understood by all men that are posted on pedigrees that the sorrel color belongs to all of the different high bred horses; it is nothing strange to see a black or bay trotter get a sorrel colt; some may with coach horses. There are men in our country who keep scrub stallions that make a great hobby about our registered Hackney stallion breeding sorrel colts, although he is a bay. They, of course, are not aware of the fact that such stallions as Matchless, Clifton 2, Langton, Performer, Enthrop Performer and many other Hackneys are sorrels and their service fees run from \$50 to \$100.

Now, gentlemen, it seems to me that we have got enough before us to prove that it does not pay to raise anything but the best. Almost every farmer has a surplus of horses and there are but few good ones.

The State pays the expense of holding this Institute and it is supposed to benefit the farmers. If we are not benefited by coming here and discussing these subjects, the State had better keep its money and we had better stay at home. I hope that you will all read this article and consider it, and if you are not benefited any by it that you will not be injured any. If you think there is anything in it that will benefit you, practice it.

CATTLE DEPARTMENT.

CATTLE FEEDING.

By J. G. Imboden, Decatur, Ill. Read before the Macon County Farmers' Institute.

Owing to the scarcity and high prices now prevailing for stock and feeding cattle, and also from what I believe is a fact, that the average feeder is not getting an average of five pounds on his cattle for each bushel of corn fed. The subject of feeding cattle for profit is now attracting a great deal of attention.

Feeding for profit need not much concern the man who owns his farm, is out of debt and has money to buy his cattle. But with the renter, the man who is struggling to get out of debt and pay for a farm, and the feeders who as most of us must borrow money to buy cattle, corn and hogs, the question of profit is an important one.

I am feeding cattle and hogs for two reasons. One is, I like the business and expect to continue in it; the other is for profit, but I don't have to tell the feeders here present that the profits in feeding cattle the past few years have been very small. You all know it, and feeding operations this winter, I think, will be no exception to the rule. But our profits have been just as large as have the profits of our merchants in business here in Decatur.

We have had and always will have this advantage over the merchant. Ours is a cash business. We can convert our cattle and hogs into cash any day we desire to sell at their market value. I have only a small farm of 120 acres. I feed about 100 cattle and 150 hogs each year, buy all my cattle, raise the hogs and buy nearly all the corn I feed. I raise about 50 acres of corn each year and cut in all up.

A system of handling and feeding a bunch of cattle that is practical for one feeder may not be practical for another. A thing is not practical unless it can be accomplished with the available means or resources. The fattening of a bunch of cattle entirely on shock corn may be practical for the feeder who raises all his corn, but the feeder who buys his corn must feed it in some other form, and the form in which this corn should be fed for the most satisfactory gain and profit will depend on many things. One feeder believes in shock corn, another ear corn, another shelled, another corn and cob meal, another soaked, another cooked. The question is, do you know that the results obtained from feeding this corn, in the several forms named, justifies the labor and expense involved in preparing it? This is the question I have been trying to settle in my own mind, and I have not yet succeeded. The gains I have been getting are much better than the average, but I am not yet satisfied. I have fed corn in all the forms before mentioned, and there is merit in all of them.

Someone has very truly said that our virtues may be overlooked, but our mistakes are sure to attract attention. If my experience is worth anything to you, you are welcome to it. If it is not, you can congratulate yourselves that it has not cost you what it has me. We believe many things absolutely; know but few, and what I may say in regard to these several feeds is what I believe to be true, based on my own experience and my observation and knowledge gained from others.

I wish to pay my respects to shock corn by saying that I believe it is the best single feed on which to fatten a bunch of cattle. and when fed under cover with plenty of hogs following, it is an economical way to feed, but with hogs it is an extravagant way, especially if the cattle are young and the corn big. The man who is afraid of work won't much enjoy feeding a large bunch of cattle through the winter entirely on shock corn.

While a great believer in the merits of shock corn, I believe that cattle fattened entirely on it will sometimes eat too much fodder for the best results. I know many good feeders will not agree with me in this, and among them is my friend, Mr. Samuel Weaver. Mr. Weaver is the closest observer of animal life in all its forms of any man I ever knew. He notes their habits, their likes and dislikes, and seems to forget nothing, and in support of his position that cattle fattened entirely on shock corn will not eat too much fodder, he recalls a bunch of cattle he fattened entirely on shock corn. They got very fat, yet they eat all the fodder clean and instead of cleaning their boxes of fodder, they would haul out clean shucked corn that the cattle had left.

We all know that such instances are the rare exceptions, and I believe that as a rule ear or shelled corn substituted for part of the shock corn will give better results, especially at the latter end of the feeding. I find that one shock of good corn sixteen hills square each day will afford sufficient roughness for 20 steers. I am now feeding three shocks to 71 cattle with a small shock of cane "sorghum" every other day, and every other day a little clover hay or mowed oats.

If you have never raised or fed any sorghum, I wish you would try a small patch of it next summer, and if you are not pleased with the results after feeding it, I will be very much surprised. I think one acre fed with other feed will be as valuable as two acres of corn.

Ear corn is fed in greater quantities for fattening cattle than corn in any other form, and cattle will get very fat on ear corn with very little roughness, and I have bought several bunches of fat cattle that were fattened entirely on ear corn, and some very extensive feeders feed little or no roughness. While not advocating this system, it simply goes to show that fattening cattle does not require as much roughness as many suppose. Most feeders who have fed

shelled corn have been pleased with the results, and when self-feeders are used it is a very convenient and economical way of feeding, and with shock corn or other fodder for roughness cattle will fatten very fast. I have a self-feeder in the barn that holds 1,000 bushels of shelled corn, and I know when there is corn put in this feeder the cattle can and will feed themselves till the last bushel is all gone.

I like corn and cob meal for about the first 60 days, then I would substitute, if I wished to finish the cattle on dry feed, shelled or ear corn. Cattle, after they are on feed 60 days, will not eat many corn cobs if they can help it; the bulk of the cobs in a bushel of corn about equals the bulk of the shelled corn. I think it is not best to compel a steer to eat a bushel of corn cobs that he may get a bushel of grain.

Cattle fed corn and cob meal will need very little, if any, roughness, and I believe the reason that corn and cob meal does not give better results is that cattle are fed too much roughness with it.

Where there are no hogs, corn and cob meal fed through a self-feeder is profitable. I think it is also a profitable feed for young cattle, and all cattle that are put on grass. I think cattle will do better on the grass coming from a corn and cob diet than they will coming from a more condensed grain diet.

I have had but little experience feeding on grass, but I do know for cattle to make the most satisfactory growth and gain on grass they should not have too much corn before taking the grass. It does not pay to turn fat cattle on grass without feed, and if your cattle are ripe when grass comes, and you would like to keep them longer, fed them soaked corn in the feed lot, and keep them there. Where a feeder has plenty of hogs, I would say that as a rule it does not pay to grind feed for cattle that are finished in the feed lot.

I have had some experience in feeding soaked corn, and am very much pleased with it, and I firmly believe that soaking either shelled or ear corn increases its feeding value 20 per cent, and I would urge every feeder here to give soaked corn a trial.

While at the Illinois State Fair last fall I became interested in the extravagant claims a gentleman made for cooked corn. He, of course, was selling a food cooker. He claimed that an average bunch of cattle fed one peck of cooked corn a day would make an average gain of 75 to 100 pounds a month and in support of his claim he offered to sell his cooker with a guarantee that one peck of cooked corn would make an average gain of two and one-half pounds or ten pounds from each bushel of corn. While not believing all that he claimed for cooked corn I was interested and thought I would get the cooker he had at the fair. We exchanged several letters in regard to the matter but did not make a trade. I decided to give cooked corn a trial by feeding 40 yearling steers. I constructed a cooker and began feeding cooked shelled corn December 20. By January 1 the steers were on full feed. Thirty-seven of these steers are Texans and the other three just fair natives. The Texas yearlings averaged just 600 pounds January 1, and the three natives 817 pounds. During the month of January all they could or would eat was seven bushels of shelled corn per day measured. This seven bushels, after cooking, measured 16 bushels. The steers were fed nine bushels at 5 p. m. and seven bushels at 7 a. m., and a feed of shock fodder or a little clover hay at noon. The 40 yearlings were again weighed January 31, a trial of 30 days, and 37 of of them averaged 652 pounds and the other three 873 pounds, making an average of $52\frac{1}{2}$ pounds in 30 days, or $69\frac{2}{3}$ pounds per day for the forty head, just a fraction less than 10 pounds for each bushel of corn consumed. This is the best gain on cattle I ever made for the amount of corn fed. But this trial is too short to satisfy me of the merits of cooked corn.

It seems to me that these 40 steers should eat more than seven bushels of corn per day and if I can get them to eat eight bushels per day through February I shall do it. I shall certainly keep them on cooked corn as long as they are doing well. All feed is given the stock in the barn and when the weather is favorable they are let in a small yard a few hours each day.

I have in the barn 71 other steers, mostly two year olds and of a fair quality. They weighed November 6 940 pounds and on January 1 averaged 1060

pounds, an average gain of 120 pounds in 55 days. They weighed January 31 1128 pounds, an average gain of 68 pounds in 30 days, about six pounds gain for each bushel of corn fed. These cattle are fed shock corn with some sorghum and very little clover hay and mowed oats. They have at all times access to self-feeders of shelled corn, yet they are fed and will clean up about four bushels of ear corn broken in a trough each day.

With corn worth less than 25 cents per bushel I doubt the profit of feeding oil cake or bran, yet I shall soon begin feeding some corn and cob meal with a little oil cake and bran and when it quits freezing will give some soaked corn. You can see that I am not partial to any one feed, but believe in a variety fed under cover in a practical and economical manner. In conclusion I would say that whatever the bulk of the feed may be, add a little of something else for variety but avoid all sudden and radical changes. Make the most possible out of what the farm will produce and if cattle are making satisfactory gains for feed consumed, buy nothing else, but if they are not doing as well as you have reason to expect, and the prices will justify, feed some oil cake or bran. While bran is not much in itself it is a great aid in the digestion and assimilation of stronger feeds. Buy the best quality of feeding cattle you can find. The best we can find are none too good. Also remember that the younger the steer of the right quality that you feed the greater the gain will be per bushel of corn consumed. If you do feed common cattle get them of good age and they will generally get very fat on plenty of corn.

In regard to dehorning cattle. While I believe the result obtained justifies the taking off of the horns, it is a very severe and painful operation and costs more in the way of shrinkage than most persons are willing to admit. I think cattle on pasture, especially in hot weather, when the flies are very bad, will do better with their horns on, but at the water trough, in the road, in the feed lot and in the car I want them off. I like the color of a good steer. If I have a preference it is for a red roan as between the Hereford Angus and the Short-horn. The Herefords will, as a rule, I think, fatten faster than either the Angus or Short-horn. Fed together they seem to ripen sooner, but with me have not gained as fast or weighed as heavy. The Angus are good feeders and will stand full feeding longer without getting patchy than either Herefords or Short-horns. They are a thick fleshed breed and it will take longer to ripen that flesh than the Herefords, but when ripe they are good sellers, great weighers, both alive and dead, and the quality of their flesh is all right. In regard to the Short-horns I will say that the right kind are as good as either Herefords or Angus. The best representatives of each breed will compare favorably with one another, and none but a prejudiced person will claim that theirs is the only breed.

At the conclusion of Mr Imboden's address there was a general discussion on the question of feeding cattle and many of the farmers gave valuable points in regard to their experiences in that line.

BEEF CULTURE.

By J. C. Bertram, Bristol, Ill. Read before the Kendall County Farmers' Institute.

The first observation I will make is this—that to succeed in this field of work you must be a student of the closest and most painstaking kind. I do not mean by this that you must wade through dreary treatises upon this subject, that you must read widely and deeply the authorities. None of these things are indispensable, but you must open your eyes and study nature herself, study her with strained attention, study intently, persistently, continually; no sluggard need apply, no dullard hope for success.

It requires the closest attention to details, the nicest of management to bring out the best result. In no other branch of farming is closer observation required, because you have no other means of proving the correctness of your treatment. To illustrate: The dairyman has in his milkpail night and morning a constant barometer of success or failure; you have only your eyes and the scales as tests of success, and the scales do not always tell the story cor-

rectly, for it is possible to gain weight in undesirable directions. You must therefore trust more to your eye than in most occupations.

This much in the way of generalities. You no doubt want me to come down to actual every day facts as I see them, and my conclusions therefrom.

The first fact I note is that there is a beef form, and that this form lies at the very basis of success in beef culture. This form is approximately that of a parallelogram, the angles being as nearly as possible right angles. In common speech, the animal is square built. This must hold true, not only of the carcass, but of the face and head as well. This shape is the opposite of the dairy form, with its sharp points and acute angles. The outline must include great breadth and depth, compared to length.

The reasons for this are obvious, the carcass itself being the product we are seeking for. We must aim to secure the largest percentage of the best meat to be found thereon. The upper half of the body contains the kind of meat we want, consequently we aim to produce a body wherein the top part is exceptionally broad and deep, because therein is located the muscles and tissues we most highly prize.

This much being conceded, the question naturally arises, how are we to produce this desirable form of animal? Simply by selecting the parent types of this form. Nature, aided by man's skill, has been at work for ages moulding animals into this shape until we can confidently predict what form we shall produce in our young things.

There are three great families of beef animals, differing in some minor respects, but each possessing its own distinctive form and certain qualities peculiar to itself. The names Hereford, Polled Angus and Shorthorn are familiar as household words to the cattle man. While they each have features of structure and constitution peculiar to themselves, they are similar in this, that the carcass is of the beef form. The constitution of the animal is such that it builds into itself the food it consumes and constructs a carcass wherein the desirable portions constitute a larger percentage of the whole than do any of the other breeds of cattle.

You ask me if I consider it immaterial which of these three great families you select. I say observation and experience would cause me to answer that I think quite otherwise. In fact I think any man who has kept close watch of the three breeds under the peculiar conditions surrounding them here has arrived at a definite choice among them for his own use. I confess that I have done so long ago.

We must take into account in choosing, first of all, the peculiarities of climate we must contend with. We are subject to great changes of temperature—violent cold, extreme heat, periods of extreme wetness, perhaps succeeded by as great an extreme of drought. We must therefore study the breeds in the light of these facts, and ascertain which one possesses the power in the greatest degree of adapting itself to our climatic conditions.

Another consideration we must not lose sight of, is uniformity of shape or form, first of all, and secondly, uniformity of color (for color is an item you must take account of in selling). Study this question of uniformity very carefully before you decide. It is a matter of vital importance whether 90 per cent of your product is of the form you desire or only 50 or 60 per cent.

Another vitally important quality is the aptitude to ripen fully at the earliest possible age. Still another is the block test, the ultimate for which we have been striving from the start. This last test is after all of greater importance than we are apt at first blush to concede it. It is quite possible for a very showy, fine looking steer to furnish a dressed carcass of much less value than a much plainer looking competitor may do.

Thus we may summarize the qualifications of our beef animal as follows: First, true beef form; second, hardiness or adaptability to climatical conditions; third, uniformity of form and color among the individual members of the breed; fourth, early maturity; fifth, the production of the best quality of meat or the block test.

In selecting the breed with which we will work we must bear in mind that neither of the great races have attained perfection as yet; that only in rare cases can we find individuals coming up to the standard of perfection we require, and as our study of this problem advances we are likely to advance our standard of excellence, and thus exclude larger and larger numbers of animals we once would tolerate.

My own personal preference for the first place is the Hereford, for these reasons: He is a beef animal, pure and simple. There are no milk families or dairy strains among them. Their partisans do not boast of excellencies along the whole gamut, but simply you can rely upon his being a beef animal, whatever else he lacks. Again, he is a hardy animal, a rustler from away back. Thick of skin, dense of hair, with immense development of lung and heart organs, and digestive organs of the best, he will withstand vicissitudes of weather almost fatal to more tenderly constructed breeds. A third quality I admire him for is his uniformity; color invariably the same and transmitted even to his crosses to a marked degree; uniformity of form almost as great as of the coat he wears.

Early maturity is another of his strong points. And he dies in a way that does not belie his living promise.

The Polled Angus is so close a second that it is quite a question if he is a second. He, too, is beef, all beef, and only beef. No dairy families lauded as such by his admirers, which means, whether we like to admit it or not, that there are whole families within the race which have become long and thin of face, angular of outline, thin of flesh, sharp as to chin or crops, narrow as to loin, have, in short, degenerated (I beg pardon of my milking friends for the word) to the milk form. Our Poll is short of leg, lusty of form, almost wheezy of breath, owing to his load of fat and thickness of flesh. He is apt to be so short as to seem overloaded. Then, too, they are as nearly alike as a handful of peas. They mature not quite as early as the Hereford, still they ripen at an extremely early age. Their beef is the prime of the prime. It is said that the great English market of Smithfield rates Herefords from the grass and Polled Scots from the stalls at the head of all, except the little Highlander with his shaggy coat and great expanse of horn.

I place the great Shorthorn third and last, not because they are not a grand race, for I think I have seen individuals among them excelling anything I ever saw in either of the other races, but because first of all, all Shorthorns are not beef Shorthorns. We have entire families closely approximating the dairy type in form, and greatly lauded by their admirers because of this recession of type. Stated concisely they as a race are less uniform in color and shape than their rivals. (Who ever saw anything but a black Polled Angus or a red white-faced Hereford?)

We have Cruickshank Shorthorns and White Roses, the one beef, all beef, the other a fairly good dairy cow, consequently an inferior beef animal because not of beef form. Again, they are not so hardy, more tender, more sensitive to change than the other races.

And again, they do not ripen at quite as early an age as their competitors.

I do not mean to be understood as desecrating the Shorthorn, but to indicate wherein I think he fails in comparison with the others. A good Shorthorn is infinitely preferable to a poor specimen of either Angus or Hereford. I mean to be understood as saying that in my opinion a larger percentage of Angus and Herefords will approach perfection than among Shorthorns.

Having produced your beef beast, the rest is easier (had almost said) even then constant vigilance is the price you pay for success. The very best blood that runs will not insure a fine animal unless you on your part supply other conditions just as vital. Good blood is indispensable; that lies at the very foundation of all success in industry, but it must be supplemented by tender care and close attention.

Comfort at all times and under all conditions is one of the first requirements of animal economy. Warm, dry beds, plenty of *rich* food. I emphasize the word rich. I don't think corn stubble and coarse straw alone sufficient to

grow an ideal steer or cow. They must be well, that is richly fed. If you can't bring yourself up to that requirement, don't go into the business. If it is in your nature to grudge your animals every grain of oats or corn they eat as being that much less to sell, don't raise them at all. Sell all your corn and oats, hay and straw, pray for the Marsden plant in order that you may sell your corn stalks, then your fields will soon be as bare as the desert of Sahara and just as cheerless.

If you take a delight in vigorous, lusty young life, with its keen appetites, if their comfort is a pleasure and a delight to you, if their daily growth is a matter of close interest, you will meet with attendant success in beef culture. You have here at your hand all the elements of success, a choice of the best races to be found anywhere on this planet, and a range of food plants unequaled anywhere on earth. Blue grass for pasture, clover and timothy of the sweetest and best quality for forage, to which may be added well-cured corn fodder, oats in such abundance that the price has receded to a point where they are scarcely dearer, pound for pound, than good hay, and to put the finishing touches upon your steer, you have such a wealth of maize that we hardly know what disposal to make of it. The raw materials are all about you in bewildering abundance. It depends upon your skill and industry to so use them as to produce the finest beef in the world, in quantities which shall cause our treasuries to overflow with riches. On this ground the world must for years to come depend upon us for a supply of this essential element for a well-fed people. Our own interest and a world's demand urge us to do our best.

CATTLE IN CENTRAL ILLINOIS.

By E. E. Chester, Champaign, Ill. Read before the Champaign County Farmers' Institute.

Believing that I have a practical audience I shall devote no time to the history of cattle, not even stopping to attempt to convince this audience that the red, white and roan of this century are descendants of the ring, streaked and speckled cattle of patriarchal times.

The assertion that the bovine race is now and always has been, because of its constant and indispensable usefulness, of more value to mankind than any other of the domestic animals, will hardly be disputed. Beef, milk, butter, cheese, cream, tallow, leather, bone and hair, used by all civilized and uncivilized people, in forms without number, are some of its commercial products. The yoke made by the hands of the lamented Abraham Lincoln, and now in possession of the University of Illinois, is an evidence of the great value of the ox to the pioneers of this State.

In days previous to railroads, from the broad prairies of this State, thousands of cattle were driven to eastern markets, carrying with them a wealth of corn and prairie grass that could hardly have been converted into much needed cash in any other way. These cattle were like freight cars, built for carrying great loads long distances, and they made it possible for the early settlers to get a foothold on these rich farm lands in spite of the long distance to a general market.

If it is true that, as has been said, agricultural communities prosper best when all their industries are kept in line and not permitted to lag behind, what omen is there for the Illinois farmers and stockmen! If we may trust official agricultural statistics, there has been a continual decline in the number of cattle in the United States, amounting to 6 per cent in five years. There has been a reduction of about 20 per cent in this State in this same time, and in our much boasted central Illinois, where prime beef can be made of grass and corn quicker and cheaper than any other place on earth, the number of cattle has been reduced nearly 40 per cent.

NOT ENOUGH CATTLE.

This much favored county of Champaign, the home of the State Agricultural College and Experiment Station, pays taxes this year on 3,230 more horses

and mules than cattle, with good 1,400-pound steers bringing in Chicago \$70 per head and good horses of same weight, in same market, for no more money. In this and many other counties in the corn belt farmers seem to be vieing with each other who shall get the greatest number of bushels of corn cribbed to prevent an advance in price to a paying point, while the stock of cattle of these same farmers consists of one grade Shorthorn cow, one grade Jersey cow and two grade Jersey heifers, all of which are usually on the down grade, and yet on most farms there are stalk fields, straw stacks and clover hay for which there is no general market—enough wasted every winter to provide well for a dozen or more of cattle, and with a little cheap corn added in the early spring, a few fat animals could be sent to grass or to market, costing not a tithe of their value.

Since the autumn of 1892 our farmers have been telling each other "there is no money in cattle," and each taking alarm from his neighbor sent the calves to the butcher. The cows followed the calves and now the ancestors of a good bunch of feeding steers can hardly be found, much less the steers, and notwithstanding a seemingly prohibitory tariff on foreign cattle, Canada and Mexico are sending thousands of cattle to the great Chicago and other markets, and Champaign county butchers are buying dressed beef and butcher stock in this same market to put on our table. In the language of the great letter writer of the first century, I say "these things ought not so to be."

TOO MUCH CORN.

There is in this county today miles of cribs of corn for which there is virtually no market, nor will there be until a short crop decreases the supply on hand; and we, growling over the tough beef the Dingley bill would prohibit but for our neglect—shall I say stupidity? The best beef is made of grass, corn and water, and pray tell where outside of Champaign county will you go to find better blue grass, clover or timothy or where to find corn that will fatten two bullocks to the acre, as some of ours will; or where to find purer or more abundant water than is found at about 100 feet from the surface here? We at least neglect our opportunities if we do not supply the other half of the demand for good juicy roasts and steaks in our own county.

But you say it will not pay. It always did pay until you began running over one another to get to the local butcher to sell your "she stock."

"O would some power the giftie gie us,
To see oursel'es as ithers see us"—
"Carrying coals to New Castle."

The children playing "hide and seek," becoming discouraged when some of their companions can not be found, cry out "all out are in free." Now, every good citizen will welcome you that are out back to the fraternity of cattle growers, but unfortunately you paid the penalty in advance when you sold out your stock. In beginning anew I trust the foundations will be laid with the best that can be found, for none are too good to bring top prices in the market, or to meet the demand for a choice product. My definition of a good beef animal would be the one that on the block would produce the greatest per cent of high priced, or the best meat, also the greatest amount of meat with the least offal. He should first of all have a good back, for all the choice cuts are in the upper half of a meat-producing animal. If the upper half of the animal is not broad with wide spring ribs there is no place to lay an abundance of choice meat, nor will any amount of feeding ever make him bring a top price. There are some animals slaughtered that run as low as 40 per cent of carcass to live weight and some as high as 70. The former will not command in the market as much per pound by one-half, and this is part of the answer to the question: why so wide a range in prices in the cattle market?

MORE DESIRABLE POINTS.

Besides being well developed in the back he should be low down in the rump and flank, with a short head wide between the eyes, and a mellow hide, with long soft hair of any color you prefer. Speaking of color, my experience

is the man who wants a very cheap animal will insist (if buying Shorthorns) on a solid red. If he puts a thousand dollars in his pocket with which to get the best that can be found, he usually comes home leading a roan. There are two animals that have won more laurels and been praised more by men than any I know of in the history of the bovine race. They are the white heifer that traveled and Clarence Kirklivingston, also white. So I say in color, take your choice, and as to breed I care not what they are if they are only good enough to win in the show ring or top the market and are true to the type of the breed they represent. If for breeding purposes they should be pure bred without a taint of scrub in their veins, nor should they be cross-bred.

During the 18th century England did much to improve the beef breed of cattle by selection and line breeding, thus unwittingly establishing a number of breeds. Conspicuous among these are the Devons, Herefords and Durhams, the latter known as Shorthorns. During that time and much of the present century America has done much to establish a breed of much notoriety, namely, scrubs. These are known from east to west and are as prepotent as the wild animals which reproduce their kind, because for generations there has been neither a cross or even selection. While much has been done to overthrow this race of cattle and for fifty years much of improved blood has been infused, until a majority of our cattle show signs of good ancestry, yet the fact that our cattle are not all better after fifty years of missionary work has been done is the strongest evidence of the danger of native blood and of the value of pure breeding, especially with the beginner, or in foundation herds.

THE BOY WAS RIGHT.

Al Renick's mother told him that he was foolish for paying \$15.00 for a Rose of Sharon calf, when he could have purchased a more promising milker for \$10, but he lived to bequeath \$40,000 to his nephew, the result of his purchase, scarcely a possibility if the cheap calf had been selected. Pure bred cattle are better than natives or grades only when they possess individual merit and evidence of merit in their ancestry, hence the value of pedigree, which is only a family record, that will show you foundation stock and every branch in the tree. There is little excuse that pedigreed or pure bred sires are not in every herd, and enough of pure bred dams on every farm to soon stock the same with a race of cattle that would be more profitable than nondescripts and give their owner more of self-respect and a liking for a fascinating business. Since prices for same, as adults, will not average more than twice their beef market value, I desire to emphasize the fact that merit must be kept ahead of pedigree in selection, for many a fine bred animal, through neglect, injudicious selection and exposure, has been placed in the list of those that ought to go to immediate slaughter; also that it is very important that cattle owners familiarize themselves with the points of merit in farm animals.

If the farmer owns a small herd of choice animals he is in little danger of neglecting them unless he is disposed to be indolent, but much time and money may be lost in not providing abundant and good feed always. For six weeks the calf may live on milk alone, but then it should have the run of a grass lot or a little oats and bran and some sweet, clean clover hay, as well as free access to pure water; in fact, it should be so thoroughly accustomed to the feed trough before the milk ration is stopped that it will scarcely regret the loss. Experiments in feeding have proved beyond a doubt that more pounds for a given amount of feed can be put on during the first year of all the farm animals' lives than at any later stage, and this difference is so very marked, amounting to from 20 to 40 per cent. that the importance of at least liberal keep the first year is evident. I believe if the term "stock cattle" was eliminated from the dictionary and from practice better beef, cheaper production of beef and quicker returns in the cattle business with greater profits would be the result.

IT PAYS TO FEED WELL.

To me it seems absurd and inhuman that a farm animal should be compelled to suspend his growth six months in every year of his life because pasturage is short and the owner too penurious to add sufficient rations to prevent this

suspension. The savory roast of beef this audience is now longing for has had a history. The farmer to provide his family with milk kept a few cows, he owned them first, his neighbor bought them and put in a larger bunch, he sold to a feeder, the feeder, (after fat), sold to a shipper, the shipper sold to the wholesale butcher, he to the retail butcher and finally it came in the back way to your kitchen this morning. The millenium in beef production will not come until the butcher receives his fat animal one year sooner (this time being lost getting used to a new home) direct from the breeder and owner of the calf. Keeping a few cattle on every farm means much to a large per cent of our farmers. It means less of arduous toil in the heated term, and more of employment in that season when farmers are usually not very busy. It means better crops on land that is farmed, for more cattle will require more grass, more of rotation and a greater variety of crops; more of fertility retained against the reckoning day with all land owners who have not a thought of future generations in farming operations; less of inefficient farm labor, less of dulling the intellect of the boys with a long siege of plowing from frost to frost and from sun to sun, less sweltering over a hot stove cooking for "the men" for the good housewife and her young daughters. In fact, the condition of agriculture without the cow is an unhealthy condition.

I believe in this country there ought to be two blades of grass grow where one grows now, that it is (from an agricultural standpoint) an unpardonable sin to sell all the cows but Rose and Brindle and plow up the last forty acres of good old blue grass sod simply to grow more corn. The only parallel is the Indian who, when assured he should have all the tobacco he could use during his life, and permitted to make a second request, said, "I will take a little more tobacco."

GROW FOR A DEFINITE PURPOSE.

Cattle, like other products of the farm, should be grown for a definite purpose. If for milk, select milk breeds; if for beef, select some one of the many valuable beef breeds.

I knew a man who insisted that the most useful cattle could be grown as follows: Beginning with the native, for it was hardy, first cross with the Jersey, for they were rich in butter fat; then with Holsteins, for they were deep milkers; then with Shorthorn, for they were good beef cattle. He lived to try the experiment, but I know not if his disappointment at the result had anything to do with his taking away.

Many a margin of profit has been lost in feeding mixed lots. All the sale cattle on the farm should be of one breed and of one type and bunched for sale in uniform sizes. One bad steer in a carload of fat cattle, if sold with his companions, may reduce the value of the lot more than he is worth.

In marketing half fat cattle a loss is often sustained. These are in no demand, not even for cheap beef, for they come in competition with western Texans, cows and a multitude of the same kind.

To sum up, let me say: The cattle for central Illinois ought to be distributed on all the farms; should be deep milking, rich milking milk cattle, or broad-backed, early maturing, well fed beef cattle, and if all except the town cow were of the latter kind so much the better.

There is a constant and growing demand for choice beef. This must come largely from our best home grown cattle, and there is no reason why the central Illinois farmer should not share in the profits of its production.

DAIRY DEPARTMENT.

OUR DAIRY INTERESTS.

By James A. Teel, Rushville, Ill. Read before the Schuyler County Farmers' Institute.

I shall speak from a farmer's point of view. Although I have no direct interests in the dairy business, I am interested in the interests of the dairymen because theirs is one of the greatest of this country. Now, who are the greatest wealth producers of this country? If you will go with me in your imagination for a few moments we shall see. We will start in at the rock-rib shores of the Atlantic and go to the golden slopes of the Pacific.

Now we have traveled three thousand miles. Now, if you please, we will start in at the frigid zone of the north and we'll go to the sunny climes of the south, and what have we found? We have found nearly six million farmers; that is one class of wealth producers to which I belong. Take the farmer and his wife, his children, his domestic help about the house and field hands, we represent in the aggregate a population of nearly thirty million.

There is another class of wealth producers of this country.

There are two hundred thousand manufacturing establishments in this country, representing a population of four millions, quite a per cent of which being children under sixteen years of age.

Another class of wealth producers are the fellows who go down into the bowels of the earth and bring up the black diamonds which drive every wheel of commerce, and every loom and spindle in this land, and every wheel and paddle on the high seas of commerce.

Now, ladies and gentlemen, I want you to distinctly understand that there never was a dollar made except that which was made by labor and that must be produced out of the earth. Add to this fact that for the last twenty years the agriculture products have turned the balance of trade to this country, and the result has been simply this, that the exports of the agriculturists have rained showers of gold into the lap of this nation. Our total exports in 1892 were eight hundred million dollars in round numbers. Now how does the per cent of exports stand? The agriculturists represent 76 per cent of the total exports, the other half of the nation represent 24 per cent of the total exports.

In 1893 the total exports amounted to seven hundred and eighty-five millions. A falling off of \$15,000,000. How do you account for it?

The price of pork, if you will remember, in the fall of '93 ran up to an exorbitant price, so much so that European nations could not afford to buy the hog product, and wheat ran to such a low price, hence the falling off. Now how does the per cent stand? 75 per cent in favor of the farmer and 25 per cent in favor of the balance of the nation. In 1894 the total exports were eight hundred and ninety-two millions. How does the per cent stand? 72.23 per cent in favor of the farmer and 27.72 per cent in favor of the other half of the nation.

Now, ladies and gentlemen, I wish to come direct to the dairy interests of this country. The total number of cows in the United States in 1890, according to the United States census report, was 16,511,950. The amount of acres necessary to provide for these cows in my judgment would be an average of three acres per cow. In some states it requires five acres per cow, but in Illinois three acres per cow is bountiful. In some states the value of these lands runs at about \$10 per acre, but in Illinois from \$20 to \$100 per acre. Now you see I am very fair in my average. The above cows produced in 1890 5,209,125,567 gallons of milk, 1,240,223,464 pounds of butter, 18,726,818 pounds of cheese. According to United States census reports of 1894 wheat produced 458,000,000 bushels, valued at \$280,000,000. Cotton, 7,000,000 bales valued at \$210,000,000. The butter produced in 1894 was valued at \$320,000,000, cheese \$25,000,000, milk and cream \$260,000,000; total value of dairy product \$605,000,000. Total value of wheat and cotton \$490,000,000. A difference of \$115,000,000 in favor of the dairy.

Now let us compare the total product of the dairy, which is \$605,000,000, with the total mineral product. In 1894 the output of gold was \$32,000,000, silver \$66,000,000, pig iron \$120,000,000, lead \$16,000,000, copper \$26,000,000, zinc \$5,000,000, making a total mineral output of \$265,000,000; a difference of \$340,000,000 in favor of the dairy. I wish now to speak particularly of the State of Illinois. The total number of cows in the State of Illinois in 1894 was 1,100,000, the fair value of these cows was \$3,300,000 or \$30 per cow. Take the lands necessary to maintain these cows at the above estimates—two acres per cow—valued at my judgment \$50 per acre or at \$110,000,000 and the necessary buildings and equipments necessary to carry on the business, and you begin to see the wealth invested in the dairy interests of this State.

The value of butter in the Elgin district alone in 1893 was \$8,036,696. The value of cheese in the same district was \$572,561,030; total value of district \$8,621,080. The total value of butter and cheese of the same district in 1894 was \$7,580,147.04. You will notice quite a fall off in the value of the product of 1894 as compared with that of 1893. Now what is the cause of this? It is the manufacture of oleomargarine, colored and put on the market in competition with cow butter. I will now give you what it takes to constitute one hundred pounds of first class oleomargarine. In a law suit between Armour & Co. of Chicago, as plaintiff, and F. C. Schramb, commissioner of the State of New York, as defendant, a formula used by the plaintiff was put in evidence from which it appeared that oleo is composed of lard 34 per cent, of oleo oil 27 per cent, cotton seed oil 12 per cent, ashton salt 9 per cent, milk 18 per cent, at a cost of \$4.96 per 100 pounds. This fraud and deception is panned off on the consumers and at the expense of the dairymen of this country.

In 1894 a chemist in the employ of the U. S. government went into Water street in Chicago and bought and paid for what purported to be cow butter, a pound from seventy-five different grocery stores. He analyzed each pound and found that 62 pounds out of the 75 were oleomargarine. Now it is clear from this that about 83 per cent of the butter sold is oleo. Now I want it distinctly understood that I am not opposed to the manufacture of oleomargarine. I am in favor of manufacturing it for those who want to use it or are not able to buy cow butter, but I am opposed to coloring it and palming it off on the people as a fraud. They have a right to manufacture it but no right to color it in imitation of butter. The cow alone has a right to color butter and she preempted that right about 6,000 years ago when the great Architect of the Universe said "Let the earth bring forth grass," the requisite qualification given to the cow for coloring butter.

Now, gentlemen, I wish to speak of the labor question. As the dairy is a part and parcel of the labor question let us if you please visit Russia. How does the labor question stand? Moneyed aristocracy on one hand and labor on the other. Go into Ireland. How does the labor question stand? The landlord on one side and labor on the other. Come with me if you please to America and how does the labor question stand? The great corporations on one side and labor on the other. There was a time in history when we had a Henry Clay who was noted for his oratorical excellencies. We had a Daniel Webster who was the most profound constitutional lawyer this country ever produced. We had a Mr. Sumner, who was editor of the Boston Liberator, who kept standing at the head of its columns "That the constitution of the United States was a league with Hell and a covenant with death" for it tolerated those two barbarous twin relics, slavery and polygamy. Mr. Sumner said some thirty years ago in a letter to Mr. Wendell Phillips on the eve of starting to the United States Senate that he had spent his life thus far in liberating the black slaves of the south, and that now he expected to turn his efforts on the white slavery of the north, but shortly thereafter he died. Now does not that same slavery exist in the north today, or worse than that he spoke of thirty years ago?

Wendell Phillips, one of the great philanthropists of our country, said the same, thirty years ago. Horace Greeley said the same. Now I wish to speak of another very eminent gentleman, a man of honor, a man of integrity, a man who had the welfare of his country at heart, a man who possessed enough magnetism combined with his eloquence to draw a nation to his bosom, a man who possessed as many sterling qualities as ever trod in American shoe leather.

This man was named Abraham Lincoln. What did he say in one of his first speeches to the congress of the United States? He said that labor must be protected, that labor preceded wealth. Wealth was the legitimate outgrowth of labor. Now I repeat as Mr. Lincoln said "As labor is the first thing on record labor is the first thing to protect," to be shielded from the cruel and aggressive hand of the moneyed interests. Now gentlemen in closing I wish to state that twenty-four states have passed laws prohibiting this fraud of coloring oleo, twelve of which passed them in 1895. And these twenty-four sister states says to Illinois, join our ranks in the prohibition of this fraud. Now in conclusion I say the dairy interests of Illinois are entitled to this protection.

MILK AS A FACTOR IN THE CAUSATION OF DISEASE.

By Dr. W. F. Weese, V. S. Read before the LaSalle County Farmers' Institute.

In considering the subject I shall not attempt to do more than skim the surface. The subject is so large and complex I can not call your attention only to the most important phases. The pertinent and healthful saying "cleanliness is next to godliness" is nowhere more applicable than to the dairy, and cleanliness as ordinarily practiced is not always sufficient, requiring supplemental precautions under conditions which favor the propagation and transmission of disease.

Modern scientific research is continually demonstrating the important part played by microscopical bacteria in the causation of disease among mankind and animals. A casual reference to certain principles of growth, reproduction and dissemination of germ life will elucidate my remarks and emphasize the importance of milk sanitation.

In referring to the subject, however, it will be necessary in a paper like this to sacrifice scientific accuracy for simplicity of statement. Briefly, bacteria or germs are one celled microscopic beings placed at the bottom of the vegetable kingdom. These organisms are without color, in form rounded or elongated and live at the expense of complex organic substances which they reduce to simpler compounds. The part which these organisms play in nature being known, it is easy to understand that they should be found everywhere where organic matter is to be reduced. Most germs live in the external world at the expense of dead matter. These we call non-pathogenic and they do not produce disease in the animal economy but perform a beneficent role in nature. Those germs which produce disease we call pathogenic, some of them we meet everywhere as the germs of suppuration and blood poison. Some disease bacteria can live and produce themselves in outside media and when accidentally gaining access to the animal system, produce disease while others only live and propagate within animal life. The germs of scarlet fever, diphtheria, glanders, etc., are only incidentally found in outside media and then only in spore or seed form. All disease germs may be cultivated outside of animal life when introduced into suitable media.

Milk, owing to the suitable elements which it contains and other characteristics which it offers is one of the most natural and fertile mediums for the growth and development of disease germs among which may be mentioned typhoid fever and hog cholera germs.

Our dependence upon dairy products, especially milk, necessitates proper sanitary precautions in the care and management of our neat stock if we are to achieve a maximum financial success in animal industry and avoid the contraction of many diseases ourselves. Sanitary precautions which have not heretofore attracted wide spread attention are destined in operation to limit the liability to the infection and dissemination of contagious diseases among animals such as swine plague, hog cholera, tuberculosis, etc. While most of the investigations conducted on this line have been directed to the curtailment of disease in man, it is obvious to the veterinarian and the astute farmer that the danger to milk fed animals must not be overlooked. Many diseases are common to man and animals and are communicable from one to the other. While the direct infection from diseases that are common, such as tuberculosis

or consumption, glanders and "lumpy jaw" is well established it is not improbable that the ingestion of dairy products containing large quantities of disease germs which develop disease only in the hog or cow, is detrimental to human health.

To facilitate handling the subject, it may be said that milk becomes contaminated with disease bacteria in two ways. First, by direct transmission of disease germs in the milk secretion of a cow suffering from a communicable disease such as consumption or anthrax. Second, by an accidental introduction of disease bacteria from outside sources and it is this contamination which is the most resourceful in harmfulness owing to its frequency. This condition can, to a very large extent, be prevented by exercising judicious care. As a rule, the greatest number of bacteria find their way into milk during the process of milking.

The straw, hair and dirt which is found in the strainer after the milk has passed through gives evidence of teeming germ life. Contamination, however, does not always come from the cow but from the milkers hands and clothing, as well as the utensils used. A general order of cleanliness should be enforced as regards the cow, milker and receptacles. Pails, cans and strainers should be brushed with a soda solution and washed with boiling water to insure against ordinary infection.

Quoting from Dr. Bryce, an eminent authority on the subject, he says: "Milk that showed 10,000 micro-organisms per cubic centimeter, was afterwards allowed to stand in a warm room six hours and during this time the bacteria increased to 100,000." In experiments by Dr. Feer he obtained the following results. In milk supplied to a children's hospital he found in winter 50 to 70,000 bacteria per cubic centimeter. In summer, under the same conditions, they averaged 300,000 per cubic centimeter, and after standing a few hours at ordinary temperature they multiplied to 14,000,000.

While perhaps, only a few, if any, of the germs usually contained in milk are pathogenic—that is produce disease—it is a well known fact that some germs which produce disease will develop in milk to the same alarming extent, especially the bacillus of typhoid fever and hog cholera.

You must also, in forming your conception of the matter, take into consideration that a healthy constitution presents an antagonism to these disease germs and it is only when the system is weakened, the number large or the virulence great, that nature is overcome and disease produced.

As showing the baneful effects of consuming milk impregnated with typhoid fever germs, I beg to cite an epidemic occurring in Stamford, Connecticut: "Typhoid fever began to appear during the month of April. No special significance was attached to its invasion. Inside of thirty days 209 cases had been reported. In the meantime diligent search was on foot to find by what means or avenue this intruding enemy was seeking the life and happiness of the community, and before the fell destroyer had been found and from whence it came, it had as its claim 386 victims and 22 deaths."

A paragraph from an article on the subject in a New York paper published at the time will explain. It says: "Every one of the cases has been traced directly to a foul well in the stabling shed of H. R. Blackham, a retail milk dealer on Greenwich avenue. A map was drawn showing the location of the typhoid cases and Blackham's delivery route. The Stamford doctors have not driven off the milkman's route in their visits. Every house with typhoid patients was a stopping place for the milkman's wagon. Dr. T. Mitchell Prudden analyzed the water from Blackham's well (which was located in the barnyard) and says "The number of living bacteria of various kinds in one C. C. is 69,660. This number of living germs would be reasonable in sewer water or a cesspool.'"

Recognizing this element of danger, it may be laid down as a fundamental rule that milch cows should not be compelled to drink from stagnant pools or contaminated wells, and milk cans should not be rinsed with water from questionable sources.

Many infantile disorders, especially that fatal malady, cholera infantum, are traceable to deleterious milk in a great many instances. A temperature of 60 degrees F. or over favors the development of the various micro-organisms contained in milk which are prime factors in the cause of many bowel disorders of children. Too much stress can not be laid on the importance of purity and cleanliness of milk fed to infants.

We now come to the important question as to how these dangers can be eliminated. It is a question which has occupied the minds of physicians, bacteriologists and sanitarians for a number of years and a great many methods have been proposed for the elimination of these disease producing bacteria which have accidentally gained access to milk. Without entering into a consideration of these different methods and processes I desire to call your attention to sterilization and pasteurization. The latter process destroys objectionable bacteria without impairing the nutritive properties of the milk, although it can not be depended upon to destroy all noxious elements but reduces the danger to a minimum. The process of pasteurization is exceedingly simple and is applicable to small quantities of milk used in private families. It consists in placing milk in sterilized bottles or jars, that is bottles and jars which have been heated as high as the boiling point and the heat maintained for several minutes. The milk is then exposed to a heat of 150 or 180 degrees F. for ten or fifteen minutes, rapidly cooled to 40 degrees and kept at a temperature below 60 degrees F. Milk thus treated will keep sweet and pure for several days. Sweet milk may be thus treated without curdling or causing any material change in the product. However, if there is the least tendency to sour the heat will curdle the milk and spoil its digestibility.

The process is of itself no advantage to milk but is undertaken simply for the purpose of destroying the activity of that which is foreign to the milk and which finds its way into milk either during or after milking.

Sterilizing milk consists in boiling it for several minutes. While this process destroys all micro-organisms, it curdles the milk and destroys its nutritive qualities and may be dismissed as not being applicable only in rare cases.

If I may be pardoned for a repetition, I have stated that the germs of hog cholera develop very rapidly in milk, this being true, the danger of carrying the virus of swine diseases from farm to farm through the medium of skimmed milk from creameries is obvious, and as a precaution, farmers should insist on having such milk raised to a temperature which, if hog cholera or other noxious germs are present, will eliminate or destroy them. If the skimmed milk was raised to a temperature near the boiling point, it could be returned ordinarily without souring and consequently would be a much more digestible food for young calves and other small animals.

In a consideration of those diseases which are transmitted directly in milk, I shall single out tuberculosis or consumption as being by far the most important.

“Let it be distinctly understood that tuberculosis of cattle and consumption of man are one and the same disease, that without the presence of the tubercle bacillus the disease does not exist, that the germ is the essential factor in the production of the disease, and that every case of tuberculosis or consumption comes from some preëxisting case of the disease.”

This disease exists to an alarming extent, killing annually in this country over 100,000 people. The prevalence of the disease in cattle differs in different parts of the country. It is especially prevalent in city dairies subjected to the influences of close stabling.

In an examination of the dairy cattle supplying milk to Ottawa last spring, we found 15 tuberculous animals out of about 300. Some of these cases, while presenting a fairly thrifty appearance, on post-mortem examination revealed the presence of the disease in an advanced form. It is this obscure character of the disease in cattle which is responsible for the incredulity manifested by stock owners and others. Instead of having that almost uniform loss of flesh so characteristic of human tuberculosis, we often find the animal remaining sleek and fat.

We have an agent in tuberculin by which we can differentiate between tuberculous and non-tuberculous cattle, even when the disease is in its incipient stage. *Tuberculin* is a product of the growth of the germ itself. It is made by what is known in laboratory work by growing a pure culture of the germs. A boullion or soup is made to which is added a little glycerine, glucose, salt, etc. After sterilizing the solution it is inoculated with the germs of tuberculosis and placed in an apparatus which maintains the solution at blood heat for several weeks or until the germs have consumed all of the nutrition of the boullion. The solution is then boiled to kill all of the germs and the liquid forced through porcelain by exhaust pressure and we have the finished product, tuberculin. By using this agent, there is no possibility of communicating the disease. When injected under the skin of an affected animal it will cause an elevation of temperature, while it will have no effect on a healthy animal.

This test has been adopted by the whole world and has been found efficient in picking out diseased from healthy animals and should be resorted to in all cases where tuberculosis is suspected.

While the consumption of milk is not the only way by which consumption is transmitted it is one of the recognized sources and the exigency of the situation demands that all endeavors of known efficacy shall be resorted to, not only for its curtailment among mankind, but to prevent its spread among bovines.

TWENTY-FIVE CENT BUTTER.

By C. Mengel, Danvers, Ill. Read before the McLean County Farmers' Institute.

Twenty-five cents for butter the year around can only be obtained by selling it direct to the consumer, who is willing to pay a good price for a prime article. It is not difficult to find families who are willing to pay that price in order to be sure of having good fresh butter every day in the year. The market for good butter is never overstocked. After you secure one or two customers and furnish them with choice butter, they will be your best advertisers, and it will not be long before you can dispose of every pound you can make at that price. In my experience I have found that it is not only the rich who are willing to pay an extra nickle for good butter, but just as often families with moderate means. The main requirements are that you should supply them with a choice article the year around. Many lose their customers by getting out of butter at some time or other in the year, generally when butter in the open market is scarce and high. Their customers will then have to pay probably 30 cents for their supply. It is not to be wondered that they will refuse to pay 25 cents during the time of the year that they could buy their butter at 20 cents or even less, when in a time of scarcity they will have to pay 30. In order to have a steady supply you will have to manage so your cows will come in fresh at all seasons of the year, most of them in fall and winter; you will also have to provide some green feed for the dry and hot months of August and September.

I have found drilled corn planted in a lot close to your cow barn the best and handiest; it is the easiest fed, and if planted at different intervals will give you good feed until frost, and by cutting and shocking some until late in winter. As to the making of good butter it is not difficult, but requires close attention to details. The old way of setting the milk in crocks and skim when cream has gathered involves a great deal of care and work. That newer and better systems avoid, but good butter can be made that way. The place where you set your milk must be cool and sweet, and above all do not let your cream stay on the milk until it gets too sour in summer and frequently bitter in winter. There is more butter spoiled on account of the cream being improperly treated than from any other cause. Good cream will make good butter.

The best and easiest way to handle milk is with a cream separator. It saves a vast amount of work, gives you a larger amount of cream from a given amount of milk, and makes a finer article of butter. It is a labor saver

and a money maker and will prove a good investment for a farmer even at the high price they are selling at, but you must be careful and get a good one as some are hard to manage. A great mistake in butter making is often made in churning too long; stop churning when your butter has gathered in the churn the size of grains of wheat, draw off the buttermilk, throw in some cold water, and so wash the milk out of the butter until the water runs out clear. You can not do this until the butter is in a lump. Now take your butter out on the worker, spread out thin and even and salt at the rate of one ounce of salt to the pound. Work just enough to get the salt well distributed and no more and you will have good butter.

Oh, yes! I forgot the coloring. Well, I always forget that. I never color my butter, and if I had helped to frame the anti-color law last summer I would have included butter. Good butter will always have color enough at any time of the year. Sensible people, such as pay 25 cents for good butter, know well enough that butter is not as yellow in winter as in summer, and they are satisfied if your butter is otherwise good. That is my experience. In the treatment of my customers I find that the precept to do unto others as you would have them do unto you works well.

TUBERCULOSIS.

By G. A. Lytle, D. V. S. Read before the Cook County Farmers' Institute.

When I was first asked to prepare something for this programme, I selected "Milk Fever" for my subject, and prepared quite an extensive paper on it, but was compelled to make a change last Thursday and prepare something on "Tuberculosis," so if you don't find this extensive or interesting enough, just consider the length of time I had to get it together and make allowances. I'll give you the "Milk Fever" paper some other time.

Tuberculosis in cattle is not a new disease by any means, as many people imagine. We hear more about it because we are getting to understand it better and to realize the need of caution to prevent an increase in the number of its victims in the human family.

Instead, however, it is one of the oldest known diseases. Moses in his laws forbade the use of meat affected with tuberculosis. During the fifth century after Christ we find frequent mention made of it. In the ninth century certain portions of Germany prohibited the sale of the meat of pigs and oxen which had consumption, and from that time down it is quite commonly referred to. But from the beginning, even before the true cause of it was known, its contagiousness and transmissibility to man from animals was recognized, and a system of meat inspection established.

It is supposed that this disease originated among cattle, because where there are no cattle there is no tuberculosis, and where cattle are thickest and the meat and milk used extensively for food, there it is most prevalent. Of course sanitary regulation governs this disease in cattle the same as it does in the human family. It develops much more rapidly in crowded and poorly ventilated stables than it does where cattle run out in the air all the time.

I saw a report some time ago, in which it was estimated that in England one each of every five cows kept for dairy purposes had consumption. Of course it does not run as high as that in this country, but it does exist here, and to a very alarming extent, and when we consider that the disease is common to man and to the lower animals, we understand that its existence in the animals that maintain the food supply of man is a menace to public health, and then we understand the value of the veterinarian to the human family.

In tuberculosis we recognize the only cause is the introduction into the system of the bacillus tuberculosis, a rod-shaped germ, discovered by Prof. Koch, the eminent bacteriologist, in 1882. He first discovered it in the sputum of a tuberculous patient, and found that in whatever living tissue he implanted it, it developed, and produced characteristic lesions.

This germ is a tough little beast which can not be easily destroyed. Drying in ordinary temperature has no effect upon it at all; it lives from 120 to 240 days in common water, and fifteen minutes under a steam spray, or in boiling water; in dry heat of 212 degrees, for an hour, and from 20 to 24 hours in a 5 per cent solution of carbolic acid. So you see that once it is brought into existence it is pretty hard work to get rid of.

It is usually taken into the system in one of two ways. The substance containing the germ, usually the sputum of a tuberculous man or animal, is thrown upon the floor or ground, where it dries, is reduced to powder, rises in the form of dust, is inhaled and carried into the lungs. Or it is taken into the stomach with the food, and being one of the few germs that will withstand the action of the gastric juices, is absorbed from the digestional tract, carried into the circulation, and implanted in any part of the body.

The lungs are most often affected, probably because, as all the blood of the body must go to the lungs for oxygen, they stand an equal chance of inoculation from the blood with the other organs, and to this is added the possibility of infection by inhalation.

Now, when this little rod, which is infinitely small, finds a resting place and conditions favorable, it breaks up into little pieces, usually three, five or seven in number. Each piece develops into a rod and again breaks up. This is its method of reproduction. This reproduction, or the presence of this little colony, sets up a little localized inflammation, and nature, to prevent further spread of the disease, throws a little fibrous membrane around it. If the system be strong and healthy, nature makes still further provision, and lime salts are deposited in this membrane, enclosing the whole thing as it were in a stone wall, where it must remain forever. This forms what is known as a tubercle. It is about the size and shape of a millet seed, resembling it so much that people used to imagine it was the millet on which the cattle were fed that caused the disease. If this tubercle be crushed and taken between the fingers, the lime salts can be distinctly felt, like so much sand. It is this calcification which prevents every germ taken into the system from producing consumption. There is another reason why every germ taken in does not produce disease. In every system there are certain cells resembling white-blood cells, called phagocytes, whose duty it is to attack and digest all foreign germs. There are two kinds of these phagocytes, large and small. It seems that the large ones digest one class of germs, and the small ones another, but the tuberculosis bacillus seems to be a very dangerous one, for both kinds attack it.

If, however, the system is not strong enough to resist the ravages of the disease, or very many germs are taken into the system at once, the lime salts can not form around them all, and the membrane alone will not hold them, but grows thinner and thinner, finally ruptures, and the contents escape, to begin all over again in as many different places as there are living germs in the capsule. This process is repeated. Ulceration of the tissue begins, and pus forms. If it be lung tissues invaded, it is the product of this ulceration, the pus, and the liquid contents of the capsule, which forms the main part of the sputum coughed up. When the ulceration reaches and eats off a blood vessel, we get the pulmonary hemorrhages so common in consumptives.

It matters not what animal be affected, or in what kind of tissue it develops, this same general process is followed. More or less of this putrefactive material gets into the circulation and the blood, instead of nourishing the various organs of the body as it should, poisons them. If it does not implant the disease in them, other complications set in, and death must follow.

It is pretty hard to give an accurate description of the symptoms presented, as they vary with the location of the disease, strength of the system and number of germs taken in, but usually tuberculosis in the cow is slow in its development and chronic in its course, though its beginning is not usually noticed. As the lungs are most often affected, we will take the symptoms of pulmonary consumption as we find it in the cow. It usually starts in with a dry, husky cough, hardly noticeable at first, or if noticed at all, will be taken only for a cold and no attention paid. This cough gradually gets worse and

becomes spasmodic and painful. It is especially noticeable in the morning and after drinking water. It can be brought out by causing the animal to exercise, or by striking a blow on the chest.

The animal, a cow for instance, begins to fall off in flesh and milk. The appetite remains good for some time, but food does not seem to do her any good. The coat looks rough and dead. She gets poorer and poorer as the absorption of the purulent matter goes on. The appetite becomes irregular. It may be good some days and on others she will not eat anything at all. The breathing becomes labored and noisy and fits of coughing will be noticed. Any little exertion tires her all out. If caused to exercise the flanks will heave, nostrils dilate, and the cough will be constant. If we listen to sounds of the chest we may hear the whizzing sound as the air rushes through the tubes obstructed with the tubercles. In some portions of the lungs the tubercles may have filled up entirely. Here you will not hear a sound. If the membrane covering the lung and the membrane lining the chest are infected, we can hear the two as they rub together, causing what is known as the "friction of the pearls—crepitation." At other times the lung may seem to be full of water. The temperature is usually not affected at first, but in latter stages begins to creep up at night. It will only be a little above normal in the morning, but at night will run up four or five degrees. She gradually wastes away, becomes weaker and weaker, is finally unable to rise and dies of exhaustion.

The length of time it runs varies, as in the human, sometimes carrying them off in six or eight weeks (quick consumption); at other times running for a year or two.

When organs other than the lungs are affected, the symptoms of a common chronic inflammation are presented, and the only way we have of diagnosing it then is by the use of Koch's tuberculin, which is also used in obscure cases of the lungs. This is a product of the bacillus tuberculosis, prepared in glycerine. It was originated with a view of securing a cure of consumption, the same as anti-toxin is used for diphtheria. As a curative agent it was a dismal failure, but it is a most reliable diagnostic agent in the veterinary surgeon's hands. The way it is used is this: The animal is placed in a quiet place and the temperature taken every two hours for twenty-four hours, and a record made of it. A certain quantity of the tuberculin is then injected under the skin, six hours allowed for it to become absorbed, then the temperature again taken every two hours for twelve hours.

If there be any tuberculosis in the system there will be an elevation of three degrees or more in the temperature. If, however, there be no tuberculosis the temperature will not be affected.

The tuberculin contains no living germs, so that it can not implant the disease if there be none in the system, and will not injure a healthy cow in the least. But if there be only a little bit present, it does hasten its development.

The source of danger to the human family lies in the consumption of the products of the diseased animals. The government realizes the danger from the meat and has established a most rigid system of meat inspection.

But to my mind the need of inspection of our dairy herds is far greater than the need of meat inspection, for two reasons: First, all meat used for food is cooked. You remember that I said boiling water killed the germ in fifteen minutes. Now if the meat be thoroughly cooked, all of the germs will be killed. Milk, however, is used just as it comes from the cow, without undergoing any process which would kill a single germ. Second, I have shown you how a strong, vigorous system, such as would crave a meat diet, might throw off the disease, while infants and invalids, whose food consists largely of milk, are easy victims. It is not my purpose to frighten any of you from the use of milk, but want to warn you to be careful where it comes from.

It is surprising how little attention is paid to the milk by intelligent families who recognize the fact that disease may exist in meat, who demand that every other article of diet be absolutely pure and wholesome, never for a moment questioning the milk supply.

In a system of experiments carried on in the east, 86 pigs, sheep and goats were fed on the milk of tuberculous cattle for three weeks. Three-fourths of the pigs took the disease and one-half of the sheep and goats.

I have given you a short general description of the disease as it exists in our animals. I trust it has been sufficiently interesting and instructive to you that you will understand the need of seeing that cattle producing the milk for your family are healthy. We are not as yet protected in any manner by law, though in some states they are having all animals affected destroyed and an allowance made the owner by the state. This system will be introduced into this State in time, but until that time does come it is the duty of every honest farmer when he has an animal which has consumption to dispose of her at once. Don't throw her milk into the can for the few cents it may bring, for it may be the means of implanting the disease in some little child and its life be abruptly terminated. And as long as the cow stays in the herd she is likely to give the disease to the rest of them, or to you or your family.

THE FARMER'S GARDEN.

By Jonathan Periam, Englewood ave., Chicago. Read before the Cook County Farmers' Institute.

Mr. President, Ladies and Gentlemen: To save many words and give a more comprehensive idea of what I am going to talk about, I have prepared two diagrams, one of a hot bed of three 4-foot by 6-foot sash, on a frame, showing the heating material of fresh horse manure from the stable, long and short together, that has been heated up once and then turned, and placed under the frame to the depth of 12 to 14 inches. If to be used for winter work the manure may have to be turned two or three times, to prevent fire-fanging. If the manure is dry, warm water is best for moistening. It should be equally moist, not dripping wet. For winter work the bed of manure should be 30 inches thick. For a bed made as soon as the grass begins to shoot, in protected places, 12 to 14 inches of manure will keep up a growing heat until the glass alone will conserve the sun's heat, after March 1st. But why a hot bed? It will increase the season by four weeks, and enable you to have large plants, in bloom, for transplanting, by the time there is no danger of frost or cold nights, and this sized bed will accommodate all the plants a family needs, including cucumbers, watermelons, muskmelons, squash, tomatoes, egg plants, okra, peppers and lima beans, for transplanting. I use no pots, inverted sods or other cumbrous appliances, as I will explain as I go along.

All the vines must be pinched back once when they have made six inches growth of runners, to induce them to throw out side runners and increase fruitfulness.

Reterring now to the hot bed shown you. It is to be made as follows:

The hot bed is to be twelve feet long, or longer if you wish, by six feet wide, the length of the sash. The sash 4 feet by 6 feet each, made of the best 2-inch clear dressed pine as to sides and ends. The top end and the sides 3 inches wide, the bottom 5 inches wide, chiseled out to allow the water to flow freely from the glass. The strips to hold the glass one inch wide by two deep, rabbeted out to hold the glass; no cross bars; the glass to lap one over the other $\frac{1}{4}$ to $\frac{1}{2}$ inches. The glass should be well fastened with glaziers' tins and thoroughly puttied.

The frame may be made of two one-inch pine boards, 12 feet long, the front one 15 inches wide, or its equivalent, the rear 18 inches wide. The sides to bevel from 15 inches at the bottom to 18 inches at the top; two 2-inch by 4-inch scantling for the lower board 15 inches long; two 2-inch by 4-inch scantling for upper board, 18 inches long, upon which to nail the sides and ends. The galleys upon which the sash slide are made of proper length by nailing between two strips 1 inch by 1 inch sound pine a half inch thick strip of sound pine, flush at the bottom so as to come flush with the top of the sash. The hot bed frame may be made of any rough or knotty lumber, if sound. This bed, after the manure is properly leveled, may receive a coating of any earth, say 2 inches, to make a perfectly even surface.

To save expense in taking care of the plants and insure against wilting after transplanting, I take common inch thick fencing, sawed into three feet lengths, also common siding, one half inch thick, sawed into three feet lengths. The half inch stuff is nailed to the edge of the inch stuff, forming the half of a square trough, like this shown. Lay these along the back of the hot bed frame, and again others next in front, until the whole bed is filled. Thus you will have a series of troughs, six inches wide by three feet long, easily lifted out and transported for transplanting. You will not be bothered with striped beetles or other insect pests, for the plants will have acquired the perfect leaves, and if broken out of the half troughs and planted, leaving a slight depression, into which a little water is poured, drawing dry earth smoothly over all after the water has soaked away, they will grow right along. Thus I have picked green cucumbers the 20th of June, green okra the first of July, water-melons and muskmelons, tomatoes, egg plant and ripe peppers from the 15th to last of July.

I had forgotten to say that these half troughs in the hot bed should be filled with the best compost, made a year previous by laying up in a square pile, any good, loamy soil from the pasture or fence corners, with an equal amount of scrapings from the barn yard, layer by layer, keeping all moist and turning the whole over twice or thrice during the summer.

The plants while in the hot bed must, of course, be regularly watered, and be given plenty of air as the heat increases and the plants grow, and for the last two weeks in the frames, be exposed fully to the air, except during cold storms and at night.

Coming now to the garden proper, I show you in this next diagram, an acre of land, that is a plat 10 rods wide by 16 rods long, containing an acre, and divided into numbered rows and distances apart, as follows:

At the bottom is a turn row, one rod wide, to be planted with pear trees, 16 feet apart. At the top is a similar turn row of the same width, to be planted with summer and early autumn apples. It will be seen that this entire piece of ground may be entirely cultivated by a pair of horses, except the 18-inch rows, and these may be cultivated by one horse, with a proper interval. The weeding, of course, must be done with weeding implements and the fingers. The entire cultivation of this plat will not exceed ten dollars, and in it you can have half the living of a large family, and of better quality than you can buy at the grocers', because fresh.

Coming now to the planting, the plat may represent an ordinary octavo book page for shape. In this large diagram I have numbered the varieties consecutively from 1 to 33, with the distances each row should occupy. The table would read thus:

TEN APPLE TREES ON FAR END.

Perennials.		Feet.	Annuals.		Feet.
1	Cherry	16	17	Okra.....	3
2	Grape.....	10	18	Bush and pole beans—string	3
3	Quince.....	8	19	Beets	1½
4	Blackberry	6	20	Carrots	1½
5	Raspberry.....	5	21	Parsnips.....	1½
6	Currant.....	4	22	Sal-ify.....	1½
7	Gooseberry.....	4	23	Onions.....	1½
8	Rhubarb.....	4	24	Lettuce	1½
9	Asparagus	4	25	Radish.....	1½
10	Pot herbs.....	4	26	Spinach.....	1½
11	Strawberry.....	3		Winter squash	12
ANNUALS.				Water melon	10
VEGETABLES.			27	Musk melon.....	8
12	Bush squash	4	28	Cucumbers	6
13	Lima beans.....	4	29	Cabbage	3
14	Tomatoes.....	5	30	Cauliflower.....	3
15	Egg plant	3		Sweet corn	3
16	Peppers	3		Potatoes	3
			31	Celeriac	3
			32	Turnips	3
			33	Kohlrabi.....	3
				Rutabaga.....	3

TEN PEAR TREES ON NEAR END.

It should be noted that the wider the row the closer the plants may stand in the row.

As to varieties of fruits, advise with your nearest nurseryman. You want no fancy sorts that cost big money. Buy sorts that will do in the climate you live in, but no winter apples. In berries, you may grow blackberry, raspberry and strawberry, of what are known as berries too soft to ship long distances, but of superior flavor. Neither should you buy untried vegetable seeds and plants because new and high priced. Buy regular standard sorts known to be good enough. I give good varieties herewith, beginning with row 8, after perennial fruits:

8. Rhubarb, Myatt's Linneus. It goes by the name of wine plant and many other names. Plant the roots three feet apart in the row.

9. Asparagus, 12 inches in row, Conover's Colossal. If the soil is rich enough, any plant will be colossal. Plant one year roots, never plant those older. Cut at three years old.

10. Pot herbs, sage. Sow early and transplant as soon as large enough, 12 inches apart in the row. Plant also tansy, wormwood and such other pot and medicinal herbs you choose.

11. Strawberry, every third plant a staminate.

12. Bush squash, crook neck and pattypan.

13. Lima beans. Plant the large Lima four feet apart. Set stout poles six feet above and two feet below ground.

14. Tomatoes. Ridge up well and set plants four feet apart in the rows. Smooth red varieties.

15. Egg plant. New York purple is good, three feet apart in the row.

16. Pepper. Plant Sweet Mountain or other varieties of thick meat for mangoes. Plant the long red cayenne for flavoring soups, stews, etc. A very little goes a great way.

17. Okra. Plant dwarf white podded, two feet in row.

18. Bush and pole string beans. Stringless is a good pole bean and Early Rachel is a good dwarf.

19. Beet. Early blood; Egyptian is the darkest of the round sorts. For winter, long deep blood beet.

20. Carrots. Plant half long orange for early and for winter.

21. Parsnips. Hollow Crown is very good.

22. Salsify. Plant the white leek leaved.

23. Onion. Danvers Yellow holds its repute among market gardeners; Wethersfield red is the best keeper.

24. Lettuce. White Silesian is one of the best for forcing. Among head lettuce Boston curled, Early Simpson and Tennis Ball are good.

25. Radish. French Breakfast, Scarlet Turnip Rooted and Long Scarlet Short-top.

26. Spinach. Lettuce leaf, round leaved Dutch; for fall sowing, Large Winter.

27. Muskmelon. Netted, green fleshed citron; Hackensack. Of the Persian sorts Sweet Ispahan is exceedingly fine, but requires a long, hot season.

28. Cucumber. Long green, White Spine. For pickling, short, green prickly.

29. Cabbage. For early, Early Wakefield is good. For late premium, Flat Dutch is standard. For pickling, Early Blood Red is good enough.

30. Cauliflower. Early Erfurt is good.

31. Celeriac, (Turnip rooted celery). Curly Leaf and Early Erfurt.

32. Turnip. Purple Top, Flat Dutch.

33. Kohlrabi. Early Dwarf White or Early White Vienna.

Now a few words in conclusion. All the vine tribes may be planted directly in the troughs, in hills six inches apart and grown there until transplanted. All other plants to be transplanted should be sown thinly in the prepared soil, and when they show the fourth leaf transplant three inches apart, and when they get to be strong plants remove them to the boxes, at a distance of six inches apart. Cabbage, lettuce, cauliflower and celery should be thus sown, and transplanted to three inches apart, and thence when strong transplanted into the open air. The same rule will apply to annual flowers. Thus you save much labor in care and weeding and enhance the earliness of bloom very much. Cannas may be grown in these six inch squares, which, by the way, contain as much earth as a seven inch pot, and be transplanted ready to bloom by the first of June. So may you grow dahlias. I have grown chrysanthemums on single stems, by putting the plants in the squares, after the garden plants have been transplanted to the open air, say the 10th of June, and had admirable flowers in October and November, by closing the glass over them when cool autumn nights came, and raising the frames from time to time as they grew in height.

At the conclusion of this address and the discussion following, a piano solo was given, after which the meeting adjourned to meet at 8 o'clock p. m.

SHEEP DEPARTMENT.

VALUE OF SHEEP ON THE FARM.

By A. J. Lovejoy, Roscoe, Ill. Read before the JoDavie County Farmers' Institute.

I am a thorough believer in sheep, or the animal with the "golden hoof," and I think that there is not a farm in our State but would be the better and the owner would make good money by carrying a reasonable number of sheep. Show me the farm that has continually carried a flock of sheep and I will show you a clean, tidy farm, free from weeds and in the highest state of fertility, where there is but little use for the hoe and scythe to keep down the weeds. I know of no better land for a crop of corn than a clover pasture that has been kept eaten down by sheep, and there is no better thing for a stubble field after harvest than to turn in a flock of sheep to pick up the waste grain and keep down weeds that start. You will often see rag weed come up as soon as the grain is cut, and sheep will eat this when quite small with as much relish as they will grass and manufacture it into the best mutton and wool. They will clean up the fence rows and headlands and every nook and corner will be fed down and be as clean as a lawn. The same acre of land that will keep a cow will keep from 8 to 10 sheep, from which the increase will pay fully as well and I think better than the cow and with little of any labor. I am a breeder of thoroughbred hogs and have been for twenty-one years, yet am never without a flock of sheep from 100 to 200. We breed sheep for the market only, and the ledger shows a balance on the right side every year, even though wool is at the lowest price ever known. What I have to say here is no fine-spun theory, but every day facts taken from practical experience, and I know of no better way to illustrate this than to give you a little extract from our sheep account as shown by our books, for I am a farmer who believes in keeping books, having always kept an account with each different kind of stock on the farm. Away back in 1876 on the 1st of November I purchased my first sheep, knowing nothing practically about sheep. A neighbor had 150 sheep—just common, every day sheep; as to breed they were a mixture of Merino, Cotswold and scrub. This man said he was sick of sheep; they did not pay. He said in the spring they would drop their lambs and walk off and leave the lamb to die, being thin in flesh, as such a man's sheep always are. I bought the 150 for \$2 per head and opened my sheep account, charging the same with \$300. The next thing I did was to purchase two black-faced rams of the Down breed for \$75. I was, of course, considered by my neighbors a fit subject for the insane asylum. However, I had bought and paid for them and charged this also to sheep, (account), which

showed \$375 to the debtor side. We weighed them out some shelled corn and oats and mixing these half and half commenced feeding a little at first and gradually increased the amount until the sheep were getting about what I thought they ought to have, as grass was now about over for the fall; we weighed out some hay and put in the sheep barn or shed and continued this system from time to time throughout the winter, always charging it to the sheep account at the market price. When it came time to put the sheep on grass we gradually reduced the grain and hay until grass was good and the sheep were used to it. I find by referring to my books that we had fed and charged into the sheep account that winter grain and hay to the amount of \$125, so that when our sheep were up to grass time they had cost us, including the rams and the feed, just an even \$500.

By the liberal feeding we had no trouble in saving most of the lambs, and we had saved 105 lambs, our flocking being made up of ewes, lambs and a few wethers. On June 18, 1877, we sheared these sheep and I find the flock sheared 1,214 pounds of unwashed wool, being worth in those days 36 cents per pound, when sold brought \$437.04. We sold 15 cull sheep for \$31.87 and gave the account credit for \$468.91, or within \$31.09 of as much as the total flock and their keeping had cost us, the 105 lambs not counted. They were easily worth \$2 each, which would have made the account stand thus if closed at that date:

DR.		
Original investment.....	\$375 00	
Feed.....	125 00	
Shearing expense.....	18 00	
		\$518 00
CR.		
By 1,214 lbs. of wool at 36c.....	\$437 04	
By 15 old culls.....	31 87	
By value of 105 lambs at \$2.....	210 00	
		678 91
Balance, profit.....		\$160 91

Besides having the original flock, less the 15 sold, which even at price paid for them would have made 135 at \$2, or \$270, making more than our capital back and \$573.91 for our feed.

We continued to cull and feed well and kept using the best rams we could afford, and at the end of four years had to all appearances a flock of sheep so uniform in size and shape that it was hard to distinguish them from pure breeds, having of course gotten rid of the original flock a few each year. Another neighbor, who had watched our sheep and concluded that sheep well cared for would pay, came to us and bought 84 ewes at \$6.00 per head, and thus we have ever found our sheep a paying investment and a pleasure to handle. We now pursue a very different method, the low price of both wool and mutton having compelled us to keep up with the requirements and to adopt a cheaper or more economical method of feeding. Instead of feeding so much hay and grain we feed largely on well cured corn fodder, either shredded or threshed by a common threshing machine, changing to hay and straw in cold, dry weather by feeding it once a day.

Supplementing these feeds with a little grain, with one feed each day of imperial sugar beets, we can keep up the fleshing quality of our flock and do it very cheaply. The past season we tried a field of dwarf Essex rape, and were highly pleased with it, the sheep coming off the rape in November fat enough for the block. By the above system of feeding we can still make sheep pay well, as it costs but one-half as much to carry them as formerly, and wool being only one-third as high in value as then. We make the profit on the mutton. We now have our lambs dropped in February or March and find we save as large a per cent as when we had them come in April or May. February lambs of the up-to-date mutton breeds, fairly handled, being given a little extra feed while quite young by having a place where they can go

through and eat by themselves, will by the time grass comes on in the spring be large lusty fellows and ready to go on improving and making the most of the pasture, and by a little extra attention and feed, if full pastures are short, can come into winter quarters fat. And by the holidays or soon after go to Chicago and top the market, weighing around 120 to 125 pounds by the car load. I have no ax to grind and no sheep to sell, but I think every farmer should have a flock of sheep, either few or many as he wishes or can give proper care. There is one thing sheep must have to thrive and that is a dry yard and good shelter in stormy weather. Buildings need not be necessarily expensive, only a good shed on dry ground. Another thing, in my opinion, which adds to the health and thrift of the flock is a thorough dipping soon after shearing each year. If there are any ticks or lice this will remove them. The dipping will pay, even though there are none, by adding to the growth of the fleece, and for this purpose I know of no better sheep dip than "Cooper's dip," which can be used in cold water, and will add much more than it costs in the quality and weight of the next fleece. In conclusion I would say, try a small flock of sheep on your farm, and when you have learned by experience you can add more, or by keeping the ewe lambs soon grow into a flock of any size you wish. When you get into it stay in it. Do not sell out when sheep are down to the lowest notch, then start in again when they are high, but stay by it and I am satisfied you will find that as a part of your business it is more profitable than many departments of the farm.

In October, 1892, we purchased 35 grade ewes of a neighbor for \$5.00 each, amounting to \$175.00, then purchased a thoroughbred Shropshire ram for \$50.00, thus making our new start in sheep \$225.00, after having been out of sheep for a short time. This made our investment \$225.00. Since that date, a little over five years, our ledger shows receipts from wool and sheep sold to be \$973.00, and our present flock of 150 sheep at a market value of \$778.00, or a total from date of purchase of \$1,751.00. Deduct from this the original investment and we have the net sum of \$1,531.00 for our feed and care, which I must say has been very satisfactory, and this transaction has been during the great depression in business and during the period of free wool, when the lowest prices ever known during my life have prevailed, our wool selling from 20 cents down to 13 cents during the five years. This is not a fancy showing but a good legitimate profit, by keeping just good grade sheep and using pure bred sires, and there is not a farmer in the State but can do as well, for we have made no especial effort and our flock has taken very little time and attention. We are keeping the ewe lambs, or most of them, and shall increase our flock as fast as we can until we have a sheep for every acre, believing that the future for both mutton and wool is very bright and that a flock of sheep well kept will pay a larger profit on the investment, with a very small amount of labor, than any other department of general farming, besides adding each year to the fertility of the farm, which is a matter that every farmer should keep in mind.

BREEDING AND RAISING SHEEP.

By Paul Harlrich, Fox, Ill, Read before the Jasper County Farmer's Institute.

From the earliest ages the sheep has been a source of profit to mankind, and its keeping and rearing an important industry. Abel, the second son of Adam, shows sheep herding as his employment, and although his elder brother proposed to cultivate the soil, the pastoral life became the favorite occupation of the human race in its early periods and the more toilsome tilling of the ground was followed from necessity, rather than from choice. With a sparse population, a scarcity, but at the same time an ample territory, the cultivation of flocks became in early times the readiest means of providing food and clothing, increasing the comforts of man, and of accumulating transferable wealth. At first sight it is a singular circumstance: on reflection it is seen to be a necessity of the case that the territory upon which the flocks of the ancient patriarchs were fed and tended is still the home of shepherds; and that there for forty centuries flocks have wandered from pasture to pasture

under the care of their nomadic proprietors. Where the physical features of the country were favorable to pasturage there the first civilized occupation was that of keeping sheep, and so it remains to this day. In view of its bearing upon the future of sheep husbandry in the United States, it is important to remember this fact: That where peculiarly favorable physical features of the country were present and the shepherd occupied the land, there the shepherd and his flock have retained possession until this day.

As civilization progressed stage by stage and garments of manufactured wool displaced those of skins careful breeding began to improve the fleece and varieties among sheep became fixed in type.

Before the christian era the fine wools of Italy were noticed and the finest of the fleeces were cultivated to a degree unknown to us of the present day. The sheep of that period were housed and clothed, their skins were oiled and moistened with wine, their fleeces were combed and washed repeatedly in order that the quality of the wool might be refined as far as possible.

Although this excessive refinement destroyed the vigor and impaired the constitution of the sheep, yet their descendants, inferior in form as might be expected, are still fine wool sheep. Thus far the improvement in sheep operated only towards refining the fleece and the carcass was a secondary object, only cared for so far as it could serve as a vehicle for carrying the wool. The lamb of the flock was considered a choice morsal; but the mature sheep was neglected as an article of food. It is only in recent times that the excellence of mutton has been made an object in the improvement of sheep.

At the present it is only in sparsely populated countries that sheep are cultivated for wool alone, while in densely peopled localities the production of mutton is of greater consideration than that of wool, or at least of its equal value. To-wit' at the present time, proximity to or distance from market, decides the choice of breeds and in fact this consideration alone, has, in some cases, been the moving influence in the creation of the new varieties or breeds specially adapted to certain localities. In similar instances the necessities of sheep breeders have led them to make some important modifications in their methods of agriculture so that while the character of their flocks has been changed for the better, their agriculture has been improved, the product of the land increased, and its value advanced until profitable sheep culture has become synonymous with the most profitable farming. In fact, the character of the farm has been indexed by the character of the flock reared upon it. This improvement has in the greater part occurred only in connection with the rearing of mutton sheep. The demand for mutton as an agreeable and cheap food is steadily increasing. The markets of the city of New York alone require more than a million sheep per annum.

Farmers, habituated to the daily use of pork, are becoming mutton eaters and the convenience of a few sheep upon the farm merely to supply the family table is now appreciated to a much greater extent than ever before. This cultivation of sheep for mutton alone is a branch of agriculture which is yearly becoming more important.

As yet, we possess no native variety of mutton sheep. The carcass of the native sheep, so called, but which is really heterogeneous mixtures of all those breeds which have come to this country, and which having been permitted to increase promiscuously, have perpetuated only their poorest qualities, is unworthy of the name of mutton; and those flocks of imported sheep of better character, such as our larger breeds, are either allowed to deteriorate or are kept for breeding purposes. It is very true that a really good carcass of mutton rarely finds its way to our markets except from Canada, where almost the sole attention is given to breeding sheep for mutton. At the same time there is a demand for mutton of that substantial kind which is represented by legs of from 16 to 20 pounds in weight, handsome saddles, and good shoulders.

Unfortunately this fact is not generally known to farmers, and if it were it is equally unfortunate that we as yet have not the kind of sheep to meet the demand. Before this excellent and wholesome food can become as popular as it ought to be and sheep keeping can become as profitable as it may be, farmers must be better informed as to the character of the sheep needed, the manner in which they may be bred, and the methods by which they may be fitted for

the market. This necessary information must include a knowledge of the modern breeds, which have usurped the place of the old kind and the peculiar management of the newer races of sheep, as well as the special crops needed for fodder and the methods of cultivating them. Heretofore in place of this practical information, American farmers have been treated to long dissertations upon the origin and history of the sheep and description of foreign breeds, which are of no possible value or interest to them.

The sheep, in addition to its value, yields to its owner an annual tribute in the shape of its fleece, which in the aggregate is a most important contribution to the comfort and industry of the people. Our own necessities therefore demand an increase in the supply of wool equal to our present production. This wool, if produced here, would not only use up a large quantity of corn now thrown upon the markets of the world, and therefore enhance the value of that which would remain for disposal, but its manufacture into clothes and goods would employ a larger number of persons who are now engaged in raising agricultural products for sale, and are therefore in active competition with other farmers.

The encouragement of sheep cultivation, therefore, has a national importance and is a subject which bears directly upon the interest of farmers. To increase the wool product to a par with the necessities of the country at the present time, would alone involve the passage through the hands of our own people, an immense sum which now goes into the pockets of foreigners.

The scope for an increase in our wool product is comparatively boundless. A full third of the territory of the United States is a grand sheep pasture of the most favorable character. With so great a scope for the cheap production of wool it seems to be a strange thing that instead of exporting largely of this staple as we might and should do, the United States, on the contrary, is one of the largest buyers in foreign markets. What a vast field opens upon our view when we consider the extent of the territory which we possess suitable for sheep culture, and what profit and increase of national wealth is there in the business to those who undertake it as the occupation of their lives, not only for a short period and intermittingly, and then to be abandoned for some other speculative business, but with a desire and a determination to succeed by the exercise of patience, perseverance and skill.

To become a successful shepherd requires that a person should have a liking for the business and possess tact, patience and perseverance sufficient to resist the temptations which may arise at seasons of depression to abandon it for some other temporarily more promising pursuit.

Luxuriance of herbage is not generally favorable unless the land is heavily stocked and the pasture kept short and closely cropped. Old permanent meadows, in which a variety of grasses are found, are better than artificial meadows which form part of a rotation with other crops; with a portion of such permanent meadows there may be many cultivated crops grown upon the other portions of the farm upon which the sheep may be foaled with benefit both to themselves and the land.

No domestic animal is more readily affected by adverse circumstances than the sheep, and none have less spirit or power to resist them. Sheep are always an unhappy flock; but the experienced sheep master has no fear on this score. He knows that a reputation for success with sheep is never gained without merit, nor lost without deserving; and that failure is not want of luck as is so frequently declared but the consequence of ignorance or bad management.

SWINE DEPARTMENT.

BREEDING AND FEEDING SWINE.

By A. J. Lovejoy, Roscoe, Ill. Read before the Kendall County Farmers' Institute.

Ever since the earliest recollection of man, the growing and feeding of hogs on the farm has occupied the attention, to a greater or less extent, of the general farmer. In our earlier days but few were grown on the average farm, and these were usually of uncertain origin as to breed. They seemed to be part scrub and the rest just hog. They were confined to a small enclosure or close pen during their entire existence, fed on the various refuse of the kitchen, and, at the age of about two years, were finished upon corn, and during the early "cold snap" of the winter were slaughtered adjoining the pen where their lives were spent, and strung upon a pole to "cool out." Then what was not wanted for home consumption in the farmer's family was loaded on the wagon and hauled to market, which in this country meant either Galena or Chicago, and there brought the magnificent sum of 2 to 2½ cents a pound, dressed weight. We who live in the present day and generation often think we have hard times, but little do we know about real genuine hard times, such as our fathers who settled the broad prairies of Illinois in the early days, had to pass through.

I have at home the old coffee mill that my father used the first years of his life in Illinois, in 1837, in which he had to grind corn to get meal to make corn bread. There were no custom mills and no wheat flour. This was but one of the many hardships of those days, so let us say no more of hard times.

The hog has kept pace with the march of civilization in all countries, and has without doubt been a source of more clear profit to the American farmer than any other class of live stock kept on the farm. There may be instances where the dairy cow has possibly proven more profitable, but this was not by the general farmer, but by a specialist or an expert dairyman, which should not be here considered, for I am talking more of the general or average farmer. If I were not, I might cite you to specialists in the breeding of pure-bred herds of swine who, by hard work, close attention and strict business principles, have built up a successful and profitable business, that possibly might make a dairy cow take a back seat.

What kind of hogs should a farmer breed to make the most money? The breed should be any of the well known leading ones that happen to strike his fancy. They are all good when properly handled. There is just now a great "howl" going the rounds of the papers about "bacon hogs," some even going so far as to recommend the original "Razorback" and the "Tamworth," which are own cousins to the "Razorback." It seems to me simply ridiculous to consider this question of changing breeds entirely to produce fancy bacons and hams. Better by far change our system of breeding and feeding. Instead of breeding year after year from immature animals, and feeding nothing but corn, change our methods, breed from mature animals. When you find that you have a sow that is a good mother, and produces large, even litters, keep her as long as she lives. If she ever has the cholera she will be much more apt to survive than a young sow, and once over it she is worth her weight in gold, for she will never have it again. We have such a sow now in our herd of Berkshires, that is in her thirteenth year. This is pretty old, but I copied a clipping which knocks us clean out. It is as follows:

"A sow forty-three years old, belonging to Taylor Bros., Lynchburg, Tenn., died recently. She had been in the Taylor family all these years. She was of the big-boned Berkshire breed, was cholera proof, and had not been sick for over a quarter of a century. She had raised eight hundred pigs, from which enough money had been realized to buy a good farm. She was buried on the farm, and a stone was marked and placed on her grave."

So much for using mature animals. They no doubt produce stronger pigs, more of them, and less liable to disease.

How can the Illinois farmer produce a better quality of bacon and hams? He can do so by selection of his breeding animals. Select the longer, leaner type. Then feed little, if any, corn, using the other grains and grasses of the farm, with the by-products of the mills and dairy. But can he afford to do this? No. Not until our Chicago packers will discriminate in price and pay more for young hogs fed in this manner than for those plump corn-fed hogs. The farmers of this State, at least those who make a business of feeding for the open market, will make more money in producing 200 to 250 pound young hogs, farrowed in March or April, and pushed till September or October, than in any other way. For at the present prices of corn, oats and rye, combined with the above by-products of the mill and dairy, there will be a good profit in feeding hogs. The day has passed when Illinois farmers can market the raw products of their farms. The grains and grasses must be condensed into a finished product, such as pork, beef, mutton, wool and the dairy products, and how best to condense these brings us to the question of feeds and feeding. On this depends very much our success or failure, either as breeders of pure bred stock for the trade or as breeders of swine for the market. A strictly first class feeder must be born with the qualifications in him. If he is not he can not be made such, and can not successfully feed any kind of stock, much less swine, for it is one thing to "sling" out corn to hogs and another to feed them as they should be for the purpose for which they are intended, and here comes the question of feeds.

We will now suppose that you are feeding your brood sows that have been bred for their spring litters and want to have them bring forth good strong litters of even pigs that are ready to hustle for their dinner one minute after they are born. If so, do not stuff your sows with corn all winter. If you do your expectations will not be realized. You may ask, why not? But for the information of any young breeders or beginners I will say that the exclusive feeding of corn to brood sows produces nothing but fat. She should have feed that will grow bone, muscle, hair, etc. This needs much besides an all corn ration, for while a litter of pigs from a sow fed in this manner would of course have hair and some bone, they would have very little muscle or strength. To get the best results from your brood sows I would use a mixture of different feeds. During the winter season use oats ground in equal parts with corn and to this add about one-half in bulk or even in weight of wheat middlings or bran, and to keep the digestion good and everything in the best possible shape, add to this about 10 per cent of oil meal. Feed all mixed into a thick mush, about as thick as would pour nicely. If fed warm so much the better. If I were feeding young pigs from fall litters I would cook or scald the feed for them, not that I think the cooking would add much, if any, to the quality of the feed for producing growth, but for the reason that the pigs like it better and will eat more of it and will not chill. Nothing looks so unthrifty to me as a lot of young pigs trying to eat slop when very cold or frozen. They eat a little, then run for the sleeping pen and pile up to get warm and when feeding time comes again they come out of the nest humped up and steaming, ready to get chilled again, while if fed on warm feed they will eat their breakfast heartily and enjoy it and will take some exercise before going back to their sleeping places. If I was feeding a bunch of last spring's pigs for the Chicago market and wanted only to get them to a proper weight to ship, I would feed them all the corn they would eat and some of the other feed mentioned, besides, just for variety. We have found one of the best things we have ever used, in addition to the feeds mentioned, during the winter months or seasons when there is no grass, is a feed once every day of sugar beets, which is much relished by our hogs and pigs of all ages. After once getting a taste of them the hogs will leave almost any feed to eat the sugar beets. I have said nothing about the feeding of milk to pigs, but every one knows that nothing can equal good milk for young and growing pigs, especially if added to the feeds mentioned. What I have said so far applies to the winter feeding of brood sows and pigs. If it was during the season of young clover or other grass I would turn the brood sows before farrowing on the clover and add a daily feed of corn. If it was young pigs, I would do the same and continue the mixed feeds of thick mush, only instead of feeding it warm, would let it soak from one feed to another, but never to sour. Would also use the same feed for the sow after farrowing, commencing at farrowing time with no feed for twenty-four hours,

but plenty of fresh water to drink, then using a little mixed feed, gradually increasing the amount as the pigs required more milk from their dam, until the sow was getting all she could eat. Good judgment should here be used by watching the young pigs, daily noting if all were thriving. If during early spring and the weather is cold, see that the little fellows take plenty of exercise, otherwise you would find them getting very fat and plump, especially in their fore parts. The neck and shoulders looking beautiful, you might think you had in these pigs a show litter, but if allowed to remain in their nest all the time without exercise you would soon notice a quick, jerky breathing, indicating a sure case of thumps, which, if well developed, can hardly be cured. But I should not wander from my subject.

There is so much to be said on the subject of feeds and feeding that one hardly knows where to stop.

Regarding the feeder, he should be a man that would rather feed and watch the pigs eat than to do anything else in the world, if he wants to excel. I have been looking for just such a man for years, but have never found him, so have to do my own feeding when at home, where I should be now. Some feeders will go the rounds and throw in the feed, no matter whether there is half a trough full left from the last feed or not, then pass on, never waiting to see if every animal comes to his meal and eats it with a relish. The old saying is that it takes a lazy man to feed hogs. I ought to have made a good one, but I have yet much to learn regarding this matter.

In conclusion, let me urge you all to look well to your feed and feeding. The best mated pair in the world can not produce show pigs without proper feeding. How many have seen a well bred pig of almost faultless form change hands and from lack of good feed, properly given, soon look like a scrub, and again see a very ordinary pig change owners and fall into the hands of a master feeder, who would so improve him as to astonish his breeder. There are many matters connected with this problem, such as clean quarters, dry beds, pure drinking water, clean troughs, a little scratching or brushing, all of which go to help the general thrift of the herd. Use good sound, sweet feed, as much of it produced on your farm as you can. Disinfect all yards and pens and troughs often and you will make the breeding and feeding of well-bred swine a success.

RAISING HOGS FOR PROFIT.

By James Graham, Stillman Valley, Ill. Read before the Lee County Farmers' Institute.

I suppose every man that raises a hog has this object in view, but sometimes we do not get a profit where we look for it, as some unlooked for cause comes between us and it.

Hog raising seems to be a very uncertain business with some farmers, and is, to say the least, very discouraging. In the first place, if you are going to make hog raising profitable you must have healthy hogs, and if you want healthy hogs you must breed for them and at the same time you must feed for them; you can not separate the one from the other. Now if you will take into consideration how the majority of the hogs in this country have been bred and fed for the last twenty-five years, is it any wonder that they die with cholera or kindred diseases. They have been bred, as a general thing, from young stock on both sides, year after year, every generation getting weaker, the wonder is that they have not all died. Then the feeding has been in the same ruinous line. They have been stuffed with corn from the time they were able to eat until ready for the market (if they were fortunate enough to reach it). A pig bred and fed in this way will be nice to look at. It will be fine haired and fine boned; will have very little action and inclined to pile up in cold weather, and a good subject for disease all the time. There is no strength or vitality about it, it is so imperfectly developed, and has no power to resist disease. And the gain in weight will be very slow after it reaches 175 or 200 pounds excepting in rare cases. With the reduced proportion of bone and muscle resulting from corn feeding, and the reduced exercise also result from corn feeding, there is a corresponding reduction in

vitality, in power to live or to bear exposure. The bones and muscles are weak, and the animal possesses no power to resist disease, and if there is any disease germs around they will be sure to find it. I am not sure but hog cholera is a good thing, but I would not like to undertake to convince a man who had lost all of his hogs that it was. But I do think that if everyone could raise hogs in a haphazard way without any loss that the price of pork would be very low.

On the other hand, pigs that have been bred from mature stock for a good many years, and stock that has been developed on grass and the bone and muscle foods, you will have a strong, healthy, active pig, with large bone and frame, and it will have a good coat of hair, and will not be afraid to move around in cold weather. You will also have a pig at seven or eight months old that will be in a condition to lay on fat that will astonish you. Its digestive organs are in the best condition possible; in fact, the whole system is just right to assimilate the food given it, and the gain will be large until ready for market.

There are other important features to be taken into consideration in breeding and feeding hogs for market when we have disease among our swine. It has a depressing effect on the home and foreign markets, for there is no one who wants to eat diseased meat if they know it, and there are thousands of people who think the hide of a hog is crammed full of cholera, and every case reported confirms their belief. This ought to impress the mind of every hog raiser with the importance of raising a healthy hog. These are facts for every hog raiser to consider from a business standpoint.

Ever since I commenced raising hogs it has been my aim to produce a hog with a strong constitution, strong enough to resist disease, and I have reason to believe that I have succeeded fairly well, for during a period of seventeen or eighteen years I have raised on an average 125 per year, and they have been the most profitable of anything on the farm, and during that time my loss has been very slight either by disease or otherwise, so little that I might say it was nothing.

I fed scarcely any grain during the summer—a little oats and middlings for swill. We fat them during the winter months. I have noticed in all the agricultural papers that they advise crowding the pigs early in the fall of the year. Now, in my humble opinion, no worse advice could be given. That is about the time I make them work for their living until the weather gets cold. Then commence to feed them grain gradually and give them a good comfortable place to sleep. I have known farmers who took good care of their pigs during the summer and fine weather, but when the bad weather set in they did not get the extra care they should have. The result was that they came to a standstill, and you might say the feed was thrown away. When the animals are not comfortable the feed is wasted.

I feed a good deal of wood ashes and salt, as that strengthens the bones and makes more pork for the amount of food consumed.

Farmers make a mistake when they select a pig to breed from that has been fitted for the fair or fat stock show; such a pig, as a general rule, proves unsatisfactory so far as I have observed. It is very difficult to get a male that has been bred and fed right, as the breeders all follow the stuffing plan. I always advise using an old hog; they have always given me good satisfaction.

HOG CHOLERA.

By Dr. Frank Bales, Monticello, Ill. Read before the Piatt County Farmers' Institute.

It has been estimated that hog cholera causes an annual loss of from \$50,000,000 to \$100,000,000 to the farmers of the United States. This being the case one would suppose that every farmer would consider himself a committee of one to investigate the plague, in a plain common sense way at least, with a view to prevention. But such is not the case. Hogs are bred, fed and cared for in much the same manner as they have been from time immemorial, and consequently when cholera breaks out in a herd, all the way from 20 per cent to 90 per cent of them die.

It is true that the fancy breeder has accomplished wonders along the line of early maturing types, but in a majority of cases he has sacrificed the constitution of his product to gain his end. Were it not for the fact that the hog possesses the most vigorous powers of digestion and assimilation of all the domestic animals, with the present method of rearing and feeding, he would succumb to the ordinary digestive ailments like hot pancakes before a hungry farmer. As before mentioned, our professional breeders have produced a type that can be fitted for the market in from eight to nine months, provided they remain healthy, but let these same hogs be exposed to the contagion of cholera, and they are the first to succumb. Every organ, every tissue of the body is of a delicate nature, and once the germ of disease gains access to the system, your over developed, overfed specimen of modern breeding dies, when one of a more rugged nature would survive.

But a rugged system in a hog can hardly be looked for so long as they are reared and fed as they are at present. As an instance, a farmer has a nice bunch of spring pigs; he feeds enough corn along with the grass during the summer to insure a good strong growth. This far you have done fairly well, but when new corn comes on you begin feeding for the market. Say you feed corn in the morning, at noon you wish to vary the order a little, so you feed more corn, then in the evening you make a decided change by feeding Indian corn. From this on until your hogs are marketed or die, you feed all the corn they will eat, and as grass is scarce, they practically eat nothing but corn. They have this advantage over us, however, when we partake of a corn diet, it is ground, and either made into mush or cornbread, and our good wife informs us that we will eat it as prepared or go hungry. While with brother pig, he grinds his own corn, and not being subject to the tyranny of a better half, can eat mush or corn bread just as he chooses. But just here you lay the foundation for hog cholera. Fed nothing but corn you build up a mass of walking fat, with scarcely enough bone and muscle to propel it. Then, to assist in strengthening his vitality, he is often compelled to feed in three or four inches of nice, clean Illinois mud, and at night he quietly reclines under the shelter of his ear, possibly in a bed of this same clean mud in which he feeds. So how can he help but be healthy?

No doubt some within my hearing will have an instance in mind when his hogs did better under just such circumstances than any bunch he ever fed. This may be true, yet you have no data at hand to show that this same bunch of hogs wouldn't have done still better had they been fed in a cleanly and a business-like manner. I am perfectly aware that hogs can be fattened in this manner and die, but I do say that when cared for in this slipshod fashion, they are much more susceptible to the contagion of cholera, and when it gains a footing, their constitutions are so undermined that they readily succumb to its ravages.

Now, some improvements along this line as a preventative, will accomplish more than all the medicine in town after the disease has been developed.

As a rule wheat and oats are not so high priced but what you could bring about a change of diet at least once a day. By grinding either or both with a little corn and making a sloppy mixture for one feed a day would be a great benefit, not only from the change itself, but would enable you to mix some good tonic and preventative along with it, which would strengthen and fortify the system against an attack of the enemy.

Of course this would mean some extra work and trouble on your part, but your avoidance of a little work and trouble is just what makes the feeding of hogs such an uncertain investment. I firmly believe that with a proper precaution hogs could be fed with as much certainty as cattle. But this precaution does not stop, by any means, with a change of food. So long as hog cholera exists you will have to take some preventative sanitary measures to avoid it. The feed lots and beds must be sprinkled occasionally with some disinfectant, such as air-slaked lime or an ounce of carbolic acid to two gallons of water. You may think this quite an undertaking, especially when you feed quite a number, but in turn I will ask you which will be more profitable, to feed fewer properly or many poorly with a loss of one-third to two-thirds of the number? Even so small a matter as occasionally raking the cobs and offal

and burning them, is a point overlooked by most of you. Yet those who have made a thorough investigation of this malady, tell us that the germs of this disease undoubtedly have a permanent abiding place in many soils, and that climatic or other influences favor their rapid growth and development, and then follows an outbreak. As the germ enters the system either by means of the food, the water or the inspired air, this would be a decided step toward sanitary precaution, as by burning the cobs and offal you would destroy the germs, beside having the benefit of the charred cobs, which is a splendid stimulant to the digestive tract.

The bedding should be changed often and the booths disinfected in the same manner as the feed lots. I hope no one present will faint when I state that hogs should, by all means, be sheltered and bedded in rainy and cold weather, not by having access to a straw stack, where they will burrow out of sight and out of reach of pure air, but in good warm booths, and limiting the number to each booth. Moore work and more trouble, I'm aware, but in this, as in the feeding, you can't afford to do otherwise.

Then another precaution, and one frequently overlooked, is allowing hogs to pasture along a railroad or water course. Diseased hogs are constantly being shipped, and the germs scattered broadcast along the road; dead ones are too often thrown into the water courses, or half buried and the germs carried to the water courses by the smaller tributaries.

The germs may even be carried from an infected district to another on the foot of an animal, or man, or the tire of a wagon. This statement may seem "far-fetched" to some of you, but remember it cost you nothing, and you can consider it at what you think it worth. But the simple fact of overlooking small matters of this nature has cost many a human life, let alone that of a hog. Flies have poisoned a small wound on the hand of man, causing the loss of a hand or arm, not that the fly itself was poisonous, but carried the germ of disease from some other source, such as a carcass, and dropped it on the wound.

You would be very clear of allowing a drove of infected hogs to be driven through your feed lots, but you might help hurry them past your premises, and in so doing, your foot come in contact with some of the offal, and at feeding time this might be dislodged among the scattered corn. A porker, whose system happened to be susceptible to the invasion of the germ, chances to get a few of said germs along with his rations, and in from four to twenty days he has cholera and yet you are unable to account for the occurrence. I mention these things to demonstrate that small matters are often overlooked in guarding against an evil, when, were they given their share of attention, we would have more faith in our ability to ward off said evil.

Our Bureau of Animal Industry at Washington has been making careful investigation for several years, and have made extensive experiments on the inoculation theory, which bids fair to be successful in time. At present they claim they can save about 75 per cent of the diseased ones, and can produce almost complete immunization in the healthy animal. This is accomplished in exactly the same manner as you are vaccinated to prevent small-pox. In fact I recently noticed in the daily papers that the bureau hoped to simplify this method of treatment to such an extent that the farmer could produce his own serum and inoculate his hogs, thus preventing an outbreak. This I doubt. They produce the serum with which they inoculate the hog, by injecting some of the germs of cholera beneath the skin of a horse or cow at stated intervals, until the injections fail to produce any ill effect on the subject. They then abstract some of the blood from the horse or cow, this blood containing what is known as an "attenuated form of the virus," and with this they inoculate the hogs.

This process, scientifically carried out, is successful to the extent mentioned on a preceding page, but in the hands of the average farmer, I doubt its efficacy. To do this you must have a hypodermic syringe, and this, as well as all other appliance, must be kept antiseptically clean, and just here is where the trouble would arise. As an instance of what would, in all probability, take place in the hands of an amateur, I will state that one of the leading veterinary surgeons of France had been experimenting with the germs of

glanders, using a hypodermic syringe in the procedure. For some reason he administered a hypodermic injection of medicine to himself, using this same syringe, having, as he thought, thoroughly cleansed the instrument antiseptically. In the course of time he developed glanders and died from its effects. Another instance of the fatal results of overlooking small matters.

In conclusion, allow me to predict that it is for those who feed on a small scale to demonstrate to their more wealthy neighbors the wisdom of sanitary prevention against this plague. Until the method of inoculation is simplified so as to be practical, your only means of prevention consists in the application of the rules I have laid down. And those of you occupying a medium plane in the financial scale are much more liable to exert yourselves in this direction than the more wealthy ones, as you feed fewer in number and are less liable to sustain the loss. Therefore it lays with you to demonstrate the necessity of using a little common sense, or shall we say a little "hog sense," in connection with one of the most profitable avenues of the farming industry.

POULTRY DEPARTMENT.

POULTRY RAISING BY ARTIFICIAL INCUBATION.

By Mrs. J. T. Blaney, Quincy. Read before the Adams County Farmers' Institute.

The managers of this Institute invited me to prepare and read you a paper on "Poultry Raising by Artificial Incubation," and in preparing it I have endeavored to be as brief as the subject would permit.

This great American nation can almost be called a nation of inventors and we sometimes boast that we have invented almost everything useful that is now in use. In this connection we might say that there is some truth in the claim, for the telegraph, the telephone, transportation by electricity, the passenger elevator, the sewing machine, the harvesting machines, typewriters and hundreds of other useful things, are purely American inventions, as well as the Maxim gun, the most rapid firing gun that has ever been made and which may prove very useful in the near future, should we have to settle the Maine disaster with Spain by the warrior argument. I might also add as an American invention, "wooden nut-megs."

When it comes to the matter of incubators we find we were antedated by the Chinese and Egyptians by thousands of years. While their ovens, for incubation purposes, were crude indeed, and the success of their operation depended largely upon the skill of those who managed them, yet they possessed the secret and, in this, as in their knowledge of medicine, of embalming and many other things, some of which has been lost to the world, the secret was retained by a few, the body of the people being in ignorance of the methods used.

The few persons who possessed the secret of operating these ovens would carry on the industry on a very large scale, some of the ovens turning out from 300,000 to 600,000 in a single season.

This artificial hatching has been so long practiced in Egypt that it is said the hen has entirely abandoned that part of their work to man and devote their time entirely to producing eggs.

But these Egyptian ovens were, indeed, very crude affairs compared to the American incubators, so that here, also, the American inventive ability has triumphed.

While the Egyptian ovens were controlled by the skill of those who operated them, and required constant attention, the Yankee incubator is so nicely arranged that it only has to be started, and it manipulates itself as nicely as a watch or a clock or any other automatic machinery. Heat up the machine, put the eggs in it and keep your lamp trimmed and burning

and the machine will do the work so easily that a person of the most ordinary intelligence or a boy or a girl can give it all the attention necessary. This supposes that you have a well-made incubator with all modern attachments, and if you have these, then artificial incubating and brooding are a complete and practical success. We would further say that the most advanced methods of artificial incubating are materially better than the natural way, that a great deal more can be accomplished, at far less expense and with correspondingly greater profits; that poultry raising was not an industry, was not a business until the advent of the successful incubator. At present there are thousands of persons engaged in the industry, and farmers' wives and farmers' daughters are clearing up snug sums annually, by watching and raising large numbers of chickens, ducks and turkeys by the use of incubators and brooders. Many persons living in cities and villages are doing the same. Where incubators and brooders are used it does not require a whole farm for a range.

Now a few words by way of comparison. It takes 14 hens to cover as many eggs as a 200-egg size incubator will take care of. This number of hens would be found far harder to manage, will cause far more work, will be much more expensive to keep, and will be by no means as trustworthy as a good incubator. These facts are well known to those who have tried both methods. The incubator is built like a piece of parlor furniture, is clean, is compact, is safe, and may be located in the house or cellar, where it is easy to reach or to care for in all kinds of weather. On the other hand the 14 hens must be kept in the hen house, shed or barn where they must be visited, let the weather be as it will.

The incubator needs oil each day, and the lamp wick should be trimmed as often. The hens, on their part, must be fed and watered, perhaps separately, and great care must be taken that each goes back on her nest, and that she does so promptly, especially if the weather is cold. The incubator is ready at all times to be set when you have the eggs ready, but not so with the hen. She will not set until she gets a good ready, and may change her mind even then and spoil a whole setting of eggs. The incubator can be used in the winter and early spring, thus enabling you to have poultry for the early market, when it commands the best price, but the hen does not settle down to business until late spring or early summer, thus bringing your poultry into market when it is already over supplied and prices are below profitable production.

The incubator does not break the eggs by getting off and on the nests, it is all the time under the control of human intelligence. It is man's brain against the brain of the hen. The hen is certainly outclassed and stands no comparison.

Later, when the chicks begin to hatch out, the incubator does not eat them, does not peck them to death because their color does not happen to suit, does not get excited and trample the chicks to death, does not leave the nest as soon as the first chick is able to follow and abandon the rest, both hatched and unhatched, to perish, as is so often done by the hen.

And now a few more words about the brooder. We have seen chicks that were raised in a brooder in April and May walk right by those cared for by a hen during the same months—chicks of the same age and both free from vermin.

When it comes to keeping your chicks free from vermin, that has always been the pest of the chickens, the brooder again outranks the hen. With the brooder your chicks will be clean and healthy, while with the hen it is impossible to keep them clean.

The modern, improved incubator and brooder is going to work a revolution in the poultry business. It is promising in the extreme, and is an opportunity which energetic, thoughtful people will take advantage of, and through which many will be led on to fortunes.

In the successful incubator and brooder lays the opportunity of those who embark in the poultry business and that is the only road to success. You notice that we always say "the successful" ones, for we admit that there are some that have not been successful and should you get one of that kind it would be as bad as a hen, but there are many now made that are proving successful and are netting their owners a very fine profit.

HOW AND WHY I RAISE POULTRY.

By Mrs. H. O. Morris, Tiskilwa, Ill. Read before the Bureau County Farmers' Institute

'Tis said that "nothing succeeds like success," and I have made a success of chicken raising for the past four years—not a "howling" success, but a cackling, crowing success—and that is why the committee have invited me here today to tell how I did it.

I raise chickens both for pleasure and profit. Pleasure, because I think I was born with a love for ever living, growing, moving plant and animal which God has created (except noxious weeds and vermin) and I certainly love to gather the beautiful, creamy white eggs from the loft, the manger, the bush or the more practical but artificial nest in the hen-coop, and to watch their evolution from the time "Old Biddy" takes them under her wing until first the candle shows there is a mysterious life therein, and later a cunning, fluffy, downy ball pecks its way into existence and announces his arrival by an energetic "peep!"

There is nothing cuter nor more interesting than a newly hatched chick, and I delight to see the cunning and active, though greedy, little things develop into long-legged, awkward and pin-feathery bipeds, and later round up and fill out until they tip the Fairbank's scale at two and one-half or three pounds; when, after being properly dressed, it makes our mouths water to watch them simmer and sizzle in the hot frying pan until they are broiled to a tender and delicate brown, and "walk out to the table, ladies and gentlemen, and taste and see if this is not the most delectable food in all the world." This is real enjoyment!

Profit, because I like to sell these same broilers at ten cents per pound, if I can get them into market early enough, and later on to have my neighbors and friends, who desire them, come and take my choice, young cockerels at one dollar apiece, or my bonnie pullets at fifty cents.

In other words, I like to have my own spending money. The farmer's wife wants spending money as well as the farmer himself. And how does a man feel without a dollar in his pocket? And how does a woman feel who always has to go to the "Rooster of the Flock" for her pin (feathery) money?

If I can make ten or fifteen dollars per month, clean cash, besides having all the eggs and fried chicken I want for the table, why shouldn't I enjoy raising chickens! Is there any other way in which a farmer's wife, with her own household to manage, can do so well with as little trouble? I think not. For example:

In 1896 I raised five hundred chickens; in 1897, seven hundred. My neighbors say, "I don't see how you do it." Well, in the first place, I have a good chicken house, without which one might as well give up the business. A good chicken house should be light and warm, and should have movable nests and perches and a concrete floor. The latter I consider of the highest importance. It is cheap and durable and can be easily cleaned out and swept, and the oftener the better. It affords no hiding place for the dreadful *Acarina*—the pest of the poultry house. Neither do rats burrough under or through it.

I have no wonderful new secrets to tell you about chicken raising. I do not use an incubator, and I have never tried one, although I have nothing to say against them. Let those who like them and succeed with them use them. No doubt they are good, but I stick to nature's own way, because I have done well at it and I believe in leaving well enough alone.

My biddies hatch ten chicks to a setting on the average. They take an immense amount of satisfaction in setting and I believe will lay again just as soon as if not allowed to do so. A "settin' hen" is a holy terror to the majority of women. They take their lives in their hands (so to speak) approach the nest with caution and with a quick, dexterous movement seize the tail—the safe end—and jerk the monster from the nest. No wonder hens treated in such a way are flighty and vicious. A well bred, well treated hen is docile and tractable, fond of human kindness and company, and even proud to have her friends visit her nest and examine her eggs; and she need not become proverbially lean if plenty of food and water is placed within her reach. A separate room should be kept for the setting hens, with a yard in connection, if possible, from which the layers are shut out.

When biddy wants to set, remove her to this room. Evening is the best time to do this. Cover her nest for one day which, in most cases, will be sufficient. In nine cases out of ten, she will accept the change thankfully, as in the new quarters there are no outside causes of disturbance to nettle her. Set from six to ten hens at once, ten being the better. That gives one hundred chicks of the same age, which can be cared for by three or four hens and the rest, after being shut up for a day or two, will be ready for business again, unless it is desirable to set them over again. This may be done, as a hen will set nine weeks on a white door knob and be just as patient the ninth week as she was during the first. I prefer, however, to set them only once.

After hatching, burn every nest where a hen has set, for an old nest is liable to hatch something besides chicks—something undesirable, numerous and hard to get rid of. Right here let me say that the very best way to be rid of mites is not to get them, and by cleanliness and constant watchfulness this may be done, and this is the only sure way to keep the flock healthy, and far better than a cholera medicine.

There are other enemies which the successful poultry raiser needs to guard against—four-footed marauders, walking forth in the night to catch the innocents under cover of darkness. A neighbor of mine had fifty chicks killed in one night by a weasel. Rats like chickens too, as well as coons, foxes and 'possums, and last, but not least, the celebrated "Mephitis Chinga," beautiful to look upon, but beauty is not his distinguishing feature, and to those who know him, "distance lends enchantment to the view." He is not an in-no-scent! For these my remedy is a good dog—shepherd preferred.

I have not said anything about the variety of chickens most desirable; that I think a matter of choice. Any standard variety—such as Langshang, Leghorn or Light Brahma—will do, only raise thoroughbreds, and take every opportunity to improve and purify your stock. I have no use for mongrels. My favorites are B. P. R. Handsome, good sized, gentle and tractable; good layers, can't be beat for the table (or the minister) and the best in the world for market.

Come and see my chickens. I can tell you many more interesting and useful facts concerning them and their care, which in this brief paper I haven't time to touch upon.

POULTRY ON THE FARM.

By S. A. Rigg, Palmyra, Ill. Read before the Macoupin County Farmers' Institute.

Does "Poultry on the Farm" pay?

Yes.

Can it be made to pay better?

Yes.

How?

Poultry on the farm has been a mortgage-lifter when properly managed, by providing for the table and household expenses and allowing the returns from heavier stock and the crops to be applied toward liquidating indebtedness. It

can be and usually is carried on as a side show to regular farming, without the expense of maintaining a separate business. Its stream of revenue is constant, and though coming in small amounts, in the aggregate it reaches respectable proportions, as some figures will show later.

You must admit that whatever poultry has done for the country has been done without any special effort on the part of the farmers. Most of you shed your cattle, stable your horses, build a house for your dog, and let the poultry sleep out doors.

Again, unlike cattle, sheep or hogs, and every other kind of live stock which the farmer produces, there is absolutely no danger of over-production. Cold storage, rapid transit refrigerator cars, and increased facilities for handling, instead of reducing the price have increased the demand and made the business still more certain and profitable.

It pays. No business can increase so rapidly and reach such magnitude unless it is remunerative. Let us look at the comparative values of some of our staple products.

"Gold—many hunted, sweat, bled and died for gold." So highly regarded, in fact, that some would make it the standard by which all values shall be measured. But the industrious little hen and her product, for one year is worth five times the output of the yellow metal.

Silver? Make it free, dig all our country will produce in twelve months, join this amount with that of gold (if other nations will agree), and "biddy" and her astonishing results will duplicate that sum three times and have some left.

More yet. Take the annual cash value of gold, silver, copper, iron and all other minerals together, and they fall short of poultry products \$80,000,000. These figures seem incredible, but are correct, as they are based upon the census of 1890.

Let me give some statistics collected under my own personal knowledge. In 1895 our poultry club made a canvass of the village of Palmyra, and the result showed, from records of the merchants and dealers, cash paid in one year for poultry and eggs, \$49,600, an increase of 1,000 per cent in ten years.

Take any live stock you will, and it must take a back seat in comparison. But this is not all. You farmers who are too busy sowing and reaping to pay any attention to "chickens," raise the biggest crop of wheat the country was ever blest with, sell it for a dollar a bushel, and you have not caught the old hen yet.

The actual figures are these:

Annual sales of poultry and eggs	\$290,000,000
" " cotton crop	259,000,000
" " wheat crop	237,000,000
" " oat crop	163,000,000

Surpassed only by the "king of American soil," corn, with \$700,000,000, and the noble horse that makes it, with \$500,000,000. Let us add to the annual sales the value of stock invested 350,000,000 hens, at 30 cents each, and we have the handsome figure of \$335,000,000—third, and close up to second place among all our products.

"O, well," says one, "I don't want to fool with chickens." Well, of course not; that is what you have been doing. Now quit that and go at it in dead earnest. (Some are satisfied to be fiddlers, while others get to be violinists.)

So some farmers fool with a few chickens, while others embark in the poultry business, put brains and energy into it, and reap a greater reward than can be obtained in many other lines.

Canada imports into our country several million dollars worth of eggs every year, because we do not produce enough to supply the home demand, while all over our land the American hen is standing around doing nothing, drinking water from stagnant pools, exposed to blizzards and all kinds of weather, yet

in the face of all this ill-treatment, meekly cackles away and almost heads the list of our cash products. I want to amend one of "Poor Richard's" sayings to fit this occasion: "Keep your hens and they will keep you."

So far we have used the term "hen" in a general sense. Now we will speak of turkey hens, which is one of the poultry lines which must not be neglected on the farm. Many farmers have told me that it costs as much to raise a turkey as a pig; but this is not true. Perhaps they mean that the same feed will not raise the hog and the turkey too. It may be true that it costs a trifle more to raise a pound of turkey than a pound of pork, but bear in mind that hogs go at 3 cents, cattle at 4, and the mainstay of American Thanksgiving at 10 cents. In addition to this, a flock of turkeys will destroy bushels of grasshoppers and crickets, and instead of being a damage are really a benefit to the meadows.

By no means last on the list comes the duck as a money-maker. It is a mistaken idea that they must have water to swim in. They can be grown more profitably without it. We are informed by James Rankin, of Massachusetts, (the largest duck raiser in the world), that water for swimming purposes hinders early maturity and delays the fattening process.

He furnishes pure water, all they want to drink, and no more. Ducks can be grown to five pounds weight in ten weeks. The young, well-fattened ones sell higher on the eastern market than broiler chickens. Think of it—five pounds, worth 50 cents, in two and a half months. If the pig could put on a proportionate amount at the same price, it would be worth over \$100. Some things about duck farming need further explanation, but we can not take the time now. But I will take the time to say that the eastern breeders are doing not only as well, but 50 per cent better than the figures given, as I have been very conservative in my estimates.

Mr. Rankin raises 20,000 ducks annually; says that "he who fails in the duck business does so through his own incompetency or neglect." The eastern breeders have the start in this branch of the poultry business, but it is moving westward, and they are only building up a market and creating a demand for all you can possibly supply. Poultry raising is a trade. It must be learned as well as any other, and in it you will find full scope for all the intelligence and energy you can muster up.

Now let us have a practical talk about chickens. If you are going to undertake to raise them at all, for goodness sake get them all alike. Get some standard variety that suits your surroundings and keep them pure. They will then mature at the same time and make a more even and more desirable lot to take to market. A flock of fowls of any variety looks better than a mixed lot, because they are dressed alike, just as a regiment of soldiers looks handsomer than the same number of men dressed in the various garbs which the citizen wears; the uniform makes the difference. If you want them for eggs alone, get Leghorns, Minorcas or Black Spanish. If for heavy fowls for table use, Cochins, Brahmas, or, if for general purpose fowl, get Wyandottes or Plymouth Rocks—get what you will, but don't mix them. If the mixture makes them better, then that which you mix with them must be better, so you would better get that kind altogether. Reliable statistics show that pure-bred poultry lays more eggs, weighs more dressed, and sells for a better price on account of its uniformity of color and size.

The average weight of fowls sold in our village is 50 per cent more now than ten years ago, when our first poultry show was held. Right here let me say a word for the poultry show. It brings the best birds in the country together. The farmer could see the difference between the pure-bred stock and the miserable mongrels they had been breeding under the insane delusion that it was poultry. They became interested, many went into the fancy poultry business and those who did not improved their flocks by buying pure-bred males. The result speaks for itself. I believe that our annual poultry show at Palmyra is worth \$5,000 a year to the poultry raisers of our territory. If you want to help yourself and others, then get some pure-bred poultry, and when a poultry show comes near you, especially a home enterprise, go into it. Not so much to further your interests individually, but as a public spirited citizen willing to work for the public good.

Poultry and fruit are the best combination, and more clear profit can be made in this way on 10 acres than 200 acres in ordinary farming.

But there is no need to carry this line of argument further. If you believe anything I have said, you must be of the opinion that poultry pays on the farm, and also, that it may be made to pay better.

How? is the next question. Well, let us make the shelter first. We will start out with a few "don'ts" first.

Don't put more than ten or twelve hens in a pen for chickens. They will really raise more chicks than twice the number in the same space. If you want more birds, make more house and yard, and keep them separate.

Don't spend a lot of money foolishly and build fancy Queen Anne poultry houses with bay windows and glass fronts, expecting that your hens will lay golden eggs to pay for it.

What to do.

Material can be bought for 50 cents per running feet, or \$16 for 32 feet long. In winter, line outside with fodder. If from these two yards you can not raise 500 chicks per annum, you are not getting out of it all there is in it. Twelve to fifteen Wyandottes or Plymouth Rocks in each yard. With 100 hens running at large on the farm, how many do you raise? Three or four hundred is about the limit. You are just fooling with them that way. Keep your breeding birds up and at work for their living, and turn the young ones out.

Now a word about stock. Don't spend a cent for scrub stock. Whatever you do, make the best of your surroundings by putting in pure-bred stock, of whatever variety you think will suit you best. Start on a small scale, and as you learn how increase your flock, until you have stocked your farm with poultry as good as the best. Get a trio of Wyandottes, Plymouth Rocks, Cochins or Langshans, or a pen, if you wish, and breed your own stock. Some prefer, and it is usually the cheaper way, to buy eggs from some reliable breeder, and raise them in that way.

OUR POULTRY INTERESTS.

By Miss Jennie Culver, Athens, Ill. Read before the Menard County Farmers' Institute.

My apology for appearing on this program is simply my conscientious gratitude to the hen. How often has her ladyship—the hen—come to my rescue when visitors have been announced—the preacher's folks, or our cousins from town.

I believe in reciprocity—but no, that's politics, and our honored chairman says politics has no place in a Farmer's Institute. Then I'll just explain my position by saying that the simple observance of the golden rule impels me—but that won't do, for that's religion, and must also be kept out. So I am left without defense, save the approving consciousness of duty performed, when I attempt to support the cause of our feathered friends, and will only say, I had to advocate "Our Poultry Interests," or let it be lost, for no one else could be found who was willing to "stand by the hen" (although I have understood it is considered a very safe place—right by the hen—if a woman is throwing stones to drive her from the yard.)

However, I think poultry is a feature of meetings of this kind which will not be easily set aside—justified by its great helpfulness in the household and its importance in economics. For many not located near a meat market, poultry furnishes a prompt source of appetizing fresh meat for the emergencies that constantly befall the table of the farmer. And how many breakfasts—early, late, unexpected breakfasts—are redeemed from oatmeal and scarcity by the timely supply from the basket of fresh laid eggs. They enter into the make-up of the pudding for dinner; and where would be the cake for supper without access to the same friendly receptacle? And angel food cake would be an im-

possibility. Our salad is doubly indebted to the hen for the clipped meat from the boiled body and dressing made largely from the natural product of her industry. The picnic dinner for the glorious Fourth of July is always a little more satisfactory to the boys and girls if it contains a generous dish of fried chicken. Methinks it would be a great surprise to many a farmer's housewife to keep accurate account of the eggs and poultry used on the table—and this account should legitimately be included in account of profit or loss in the poultry business.

From the standpoint of the farmer's wife, poultry is profitable, even though there should be no surplus of eggs or broilers for the market. When the wholesomeness of the diet and the short time required to prepare them for the table is considered, and the nutritive value of fresh eggs is properly understood, it is only justice to acknowledge the benefits resulting from a generous use of poultry and eggs (and less of pork), making it worth while to keep poultry for family use alone. However, it is an easy matter while supplying one's own table to produce a surplus and thus realize a visible income, in proportion to the amount of care and work bestowed. There is always a market for poultry and eggs, and when we have acquired better methods and have learned how and when to make hens lay, we may realize a large per cent on an investment in a flock of fowls.

It must be remembered, however, that this extra profit comes by extra labor and care. But given just the ordinary care that can be given by the average farmer's wife, with her limited time for the work; by a careful and constant observance of a few things that are always essential to even modest success, a fairly good profit above the home consumption may result. And just here it occurs to me that the amount of this income will be much increased and much more satisfactory if the "gude mon" of the house proffers the helping hand. Interest in the poultry will be greatly broadened and deepened, if the work of caring for the flock is shared by the older members of the family. The regular chore of feeding and watering is just as effectual, the feed being the same. The demands on the time of the average farmer's wife, morning and evening, are already almost too numerous to mention, especially if there are small children in the household. The farmer's helpfulness is highly appreciated at the time of culling the flock, selling on the market whatever may not be desirable to keep. And all through the season there are some things that are almost sure to be left undone, unless his faithfulness proves unabated.

One of the first essentials, most frequently and earnestly insisted upon, and which heads the list of all brief items—that of cleanliness—which means all that goes to exterminate vermin, and in a large measure disease, requires time and time well spent at hard work; and the time of most farmers' wives if not supplemented by the other members of the family, will be insufficient for the work that should be done. The war against the chicken house is unceasing, and eternal vigilance is the price of liberty. The supply of gravel, or some form of grit, is very important, and one of the best preventatives of disease. The provision of grains and variety in feed for the production of eggs; the making and repairing of coops for the chicks and for feeding or the special enclosure for little chicks (a very convenient if not necessary luxury), also, the protection of young chickens, and old ones as well, oftentimes, against the enemies that come in the night—a very important matter to consider, as will often be noticed when counting over after they have been hatched for some time; all these are suggestive of ways in which the farmer's wife's husband or son may help very materially in making poultry profitable.

Having a keen sympathy for beginners, especially young people, I bespeak your pardon for a few hints which haply may be of helpfulness to any such, prospective or otherwise, who may be present. First of all have an enclosure where your fowls may feel at home, and where you can meet them and become mutually acquainted. Do not confine them therein, but feed them there and provide shelter and other home like luxuries within the enclosure. The shelter may be very plain and inexpensive, the hen being more appreciative of things provided for health and comfort than of appearances. The dust-bath is one of these things, and coal ashes may be used very profitably as a large part of this toilet article in which the energetic, enterprising hen will take great delight. From the ashes fowls will pick up many a sharp bit of cinder as a sub-

stitute for gravel or grit. They require something of that nature to insure health.

The best known breeds—each have their good points, and by a study of location and surroundings the variety may be selected that best suits the place. But I think facts will bear me out in the statement that of the 87 distinct standard varieties the Plymouth Rocks are the most popular farmer's fowl, and justly hold their position. Do not start with too many; be governed by the accommodations you are able to give them. Infuse new life and activity into the flock every year by getting new pure-bred cockerels. Do not neglect this; the effect of inbreeding is not best even for one year. Cull the flock early in the market season, and be thus better able to provide comfort for those kept over. Carefully gather and select eggs for setting, discarding any that are unnatural in size or mis-shapen in any way. If possible separate setting hens from others, setting two at the same time. One hen can care for the chicks of both nests, usually. Then comes the new duty of feeding the chicks, theory and practice differing with every individual poultry raiser. Not wishing to be wearisome or impose on your leniency, I will refrain, leaving the chicks for the young people to raise. But let me add in passing that patience is a great factor in successful poultry culture, and natural good judgment is another, following the directions given in poultry journals and Farmers' Institutes often proving detrimental to stability of purpose; unless, indeed, one might profit from the example of the hen—scratch over the litter and, perchance, pick up a good grain now and then.

The demand for poultry increases with the increase in population, and although poultry is almost as universal as vegetation wherever man has made his home, yet the supply comes far short and millions of eggs are imported annually to supply the markets of our great cities. This seems to be an extravagance that ought not to exist. There certainly is room in this great country to raise our own poultry and eggs, if only everybody wasn't too busy at something else. Nor is the value of poultry and eggs of small proportions when compared to the other lines of agricultural interests, as may be noted by referring to statistics.

As has doubtless been noticed this paper has been devoted exclusively to chickens. Not so much on account of a preference for them, as because of their being the universal, practical fowl, found on every farm. I do not wish to be understood as discouraging the raising of turkeys or waterfowls, by slighting them at this time. Rightly they belong to "Our Poultry Interests," but the treatment required to succeed in raising them differs so essentially that each one must remain in its own class. I plead entire ignorance and inexperience in raising waterfowls, but have always raised turkeys in moderate numbers. They are interesting to raise, grow rapidly when once started, and are unsurpassed as a table luxury for the feast days of the year, bringing in a large profit, for the outlay, when sold on the market.

The interest in poultry is increasing. Poultry papers are numerous. "Poultry Notes" is an item of every farm journal. Exclusive poultry shows are held in many places. All of these things will certainly result in great good to the poultry raiser; and we shall doubtless learn to use better methods and appliances, and proceed with more certainty as to results,

PROFITS IN POULTRY.

By Bering Burrows, Long Creek, Ill. Read before the Macon County Farmers' Institute.

If I were to announce that during the year 1896 \$290,000,000 was earned by poultry and that these figures were based on statistics collected from commission houses only, would any one be surprised? The grocery stores are left out of the calculation and no account is taken of the eggs brought in weekly by the farmers and traded for groceries and dry goods. Yes, there is profit in poultry if you have the right sort and give it proper attention. Here are the two leading questions. What variety and how to manage? As I take it this subject is more applicable to the farmers and therefore will be considered

in that light. Select the variety that pleases you, first in looks—for whether you breed for fancy or for the market this is the first consideration, then as egg producers and finally as table fowls. Remember that nothing adds so much to your landscape as a uniform color among your flock nor more to your profit when a dozen live birds are brought to the market. If the Barred Plymouth Rocks are chosen get the best if it takes all your capital for one small breeding pen and raise as many as possible the first year with common hens. If this breed has merit the purer the better and your choice must now have your careful attention. No policy is more detrimental to breeding business than that of crossing. Do not try to improve upon a breed that has required years to bring to the present high state of cultivation, by presuming to introduce new blood.

“The breeding of poultry is no longer an experiment. Years have been spent in producing these ideals that should be kept so by pure breeding. If your means are limited and your idea not to go into fancy poultry see to it that your cockerels are all pure bred for any fancier can supply you with good birds at \$1 each. You are then breeding up and improving your flock, whereas with cross bred cockerels your results are nothing but culls. There has always been a great cry among farmers against pure bred stock for utility. The idea of a cross bred lot of hogs being made thrifty and more easily fattened has generally prevailed and not only that but thoroughbred stock have often been condemned as delicate, more subject to disease and generally more unprofitable for the average farmer. One of the greatest features of good stock is good care. Whatever a farmer values will receive his best attention. An intelligent farmer is hardly contented in having his efforts wasted upon poor stock. He should therefore be as proud of his poultry as his horses and cattle. Whatever pleases the eye will call for extra care and whenever you have this you all know the result. In poultry as in every other variety of stock we have attractiveness and beauty closely allied and almost inseparable to utility and this is the aim of all our efforts. The explanation of the word utility in connection with fowls means, first, egg production; second, dressed poultry. These two characteristics are most carefully bred and fostered by the fancy breeders who vie with each other in the production of their favorite breeds. It is proved that the highest class exhibition fowls are best for market purposes. There is a popular notion among farmers that every spring a new set of cockerels must be obtained somewhere and as cheaply as possible. The result is that Mr. Smith thinks he can hardly afford to spend any money for new ones but finds that Mr. Brown has some fine large ones as badly mixed as his own he can trade for, and with a lot of mixed pullets and the cockerels of Brown's he starts out for another season. The result will doubtless be a repetition of former years, the lowest prices obtained and mixed stock for another year. If Smith had begun with thoroughbreds he could have drawn from his own flock instead of trading with Brown and kept the most choice cockerels for his own use, for inbreeding with poultry has proven a success for as many as eight years in the same line. George H. Northup, a great breeder of New York State, has inbred his prize winners for 11 years and lately sent a breeding pen to Cape of Good Hope, South Africa, the fowls being strong and vigorous enough for such a voyage. Other big breeders are doing the same thing. Do not introduce new blood if you have any blood at home that is worth reproducing. Some one will ask how about the old common fowl that run out and become of no account. The fact is that no selections were made in breeding and the best were picked out for the table and killed while today the best are kept for breeding purposes.

“Profits in poultry? Is it a question at all? The numerous poultry journals published throughout the country are ample evidence. Every month 30,000 copies of the Reliable Poultry Journal are sent out from Quincy, supported by breeders who pay well for advertising space and who have been before the public for years. For two years the State appropriated \$2,000 to encourage the cultivation of poultry. Are we to hang back and say that this is only to provide a State show and not to help us. Why are we not as farmers breeders of pure fowls that might have a place at the State show. With all the range, cheap feed and natural advantages should we leave this important industry to our city neighbors? Are our farms too small or our time so taken up that we

can not receive a part of the \$5,000,000 sent from this country every year to buy eggs for our wealthy town friends. The State Board of Agriculture appreciated the 3,000 birds that were sent to Springfield in 1895 and enlarged the space until the poultry building is now on a par with any of the others. The fancy breeders of pure bred fowls are getting fancy prices for their winter eggs by using the rubber stamp to indicate the day each egg was laid and this with their name on every egg is a warrant to the purchaser.

"Our country eggs sent in promiscuously are sold along with the packed eggs at a low price and our profits seem small accordingly. With a flock of early hatched pullets and early moulded hens of a good laying breed our profits should be large for winter eggs. A little consideration may be necessary. Extra precaution about warm quarters, absolute cleanliness and systematic feeding are essential. How many vegetables are standing in our gardens frozen and worthless that might have been good green food for winter layers. A blighted cabbage head suspended for the hens to jump at provides the exercise so necessary at this idle season. A quart of bran mash and boiled potato peels, with a pinch of salt, in the morning, a pint of whole wheat or oats scattered in the litter at noon, and a quart of whole corn warmed at night provides a good daily ration for every 15 fowls. Green cut bone every other day and old mortar or oyster shells at all times will help the layers and if the eggs are not forthcoming or your hens unhealthy look for vermin. All the diseases begin here. Do not wait till the fowls begin to die and your neighbor says he thinks your hens have the cholera or some other impossible disease, but take up one and look for the body lice and if you find any go to work. Put a pound of pure soap into one gallon of hot water, mix with one gallon of kerosene, worth 15 cents, and one pint of crude carbolic acid, worth 10 cents. Put the mixture in 12 gallons of rain water and spray your hen house thoroughly with a sprayer which will cost you 50 cents and which you can afterward use on your fruit trees. This is the great kerosene emulsion explained in your government report and is the greatest insect killer known and may save you many half dollars for advertised lice killers and condition powders, which are manufactured chiefly for us unsuspecting farmers who haven't time to read the books the government sends us."

Mr. Burrows in concluding gave the names of the different breeds of fowls and classified them. He also made some remarks about ducks and turkeys and gave some valuable information in regard to the extermination of chicken lice. Mr. Burrows gave a short description of the operation of caponizing fowls.

HOW TO RAISE POULTRY.

By Miss Hattie Ballard, Bradfordton, Ill. Read before the Sangamon County Farmers' Institute.

While I have always been successful in raising poultry, yet when it comes to telling anything I know about it I feel very much like some of our college students appear who graduate with high honors—they do not seem to be able to give one much of an idea of all they have learned.

My knowledge of poultry comes from what common sense and experience has taught me. I find a great deal that I read in poultry journals unnecessary and impracticable on the farm.

I commenced the work of raising poultry because I liked it, and I believe one must love a work to succeed. I have continued to raise poultry because it seemed to bring quite a little money with very small expense.

Two things I have found positively necessary to successful poultry raising—cleanliness and a large portion of one's time. I thoroughly clean the hen house each week—and each day is better; use plenty of whitewash three times a year at least; fresh tobacco stems and straw in the nests; plenty of fresh, clean water; feed them in a clean place. I fasten the poultry from the

house during the warm weather, as I think this best for the poultry, saving time and labor. I give two-thirds of my time to the care of my hens during the hatching season.

Two things I have found of value with the mother and her brood. First taking her away from the chicken yard to a place where the ground is mellow, or amongst berry bushes is an excellent place. I prefer tieing the hen to fastening her in a coop. Give the chickens plenty to eat three or four times a day, and this will give such as are weakly a chance to get strong. In about two weeks after hatching I bring them back to the yard and put them in a large box, and I often give 60 chicks to one mother.

The best feed is coarse ground corn mixed with clabber. Hard boiled eggs and cooked food I believe nonsense.

As to my success, I usually raise from five to six hundred, and this year one thousand. I have readily sold them for three dollars a dozen, the early ones bringing over four dollars per dozen when they weighed 1½ to 2 pounds.

If you want me to tell you how to make poultry really profitable, you will have to tell me how to market the poultry before the chicken thief, a problem I don't think the average farmer has yet solved.

There is no doubt in my mind from my own experience of poultry raising bringing large returns for the small amount invested if given the proper attention.

THE APIARY DEPARTMENT.

BEES ON THE FARM.

By J. A. Green Ottawa, Ill. Read before the LaSalle County Farmers' Institute.

Beekeeping is one of those occupations which by their nature seem to fascinate and absorb the attention of those who engage in them to an extent which lifts them above the level of ordinary occupations. Few persons who are capable of enthusiasm fail to become enthusiastic over beekeeping if they study the subject enough to become once deeply interested and if they meet for a time a fair degree of success. Even to one who is not inclined to hobbies there is much to interest and instruct in the study of these wonderful insects whose life history and habits differ so entirely from those of other domestic animals.

The farmer is one who should feel specially interested in bees and their ways, since his fields and orchards are to a large extent dependent on the bees to fructify and make them fertile, and it is from them that they gather their stores of nectar. Among the minor rural industries none better deserves his attention than beekeeping.

Not that every farmer should make beekeeping a part of his business. Far from it. I should advise most farmers not to undertake beekeeping on any extensive scale, because experience has shown me that a large majority of those who attempt this make a failure of it and in the long run lose more money than they ever get out of it. I have frequently been called upon to help a farmer start an apiary, either by selling him supplies or by giving him advice. In most cases, while all went well for a time, their newly found enthusiasm evaporated, neglect crept in, other duties kept from the bees the care they needed and a few years found most of them out of the business, poorer and wiser. While bees will sometimes bear considerable neglect, it is seldom that any considerable number will thrive for any length of time without intelligent and painstaking care.

Few men are so constituted that they can give a proper amount of attention to two varying lines of business.

Successful beekeeping demands thoroughness, promptness and perseverance. It depends on the faithful performance of many small duties at just the right time. The man who is not prepared to give his bees such care should restrain his ambition. At the time the bees need most attention the farmer is apt to be particularly busy at something else and the result is that the bees are neglected. Sooner or later excessive swarming, a poor honey season or a hard winter brings havoc to the apiary and the owner concludes that it does not pay to bother with bees.

Have I painted the picture too dark? There is a brighter side to it. The farm is the place of all others where bees should be kept and where someone can be found to give them the requisite attention, there are few farms where at least a colony or two will not prove profitable.

Let me give you a suggestion. One of the darkest clouds upon the farmer's horizon is the fact that the young people do not care to stay on the farm. The monotony of farm life, the endless round of similar tasks, too often unenlightened by any living interest in their daily toil, becomes unendurable to the active and restless spirit of the youth, who hopes in the more varied life of the town to find an occupation that is congenial.

Now, give to the boy or girl some occupation in which they can feel a personal interest. Beekeeping is unsurpassed as an occupation suited to all, boy or girl, man or woman. There is nothing monotonous about beekeeping. There is no wearying round of "chores," feeding or milking or dishwashing that must be gone through with two or three times every day, three hundred and sixty-five days in the year, though the heavens fall. There is work enough about it, if it be done properly, but there is variety and change.

Let the boy or girl have a colony or two of bees. Let me remark right here that no one, old or young, whether he expects to make beekeeping his future business or not, should commence with a much greater number.

Furnish them with the appliances to care for them properly. First and foremost among these let there be a good book upon bees, that they may learn the foundation principles of the science. You will do well to add to this a journal devoted to bees, that they may feel the stimulus of others' ideas as expressed in current discussion and topics suited to the times. The one who neglects to avail himself of the experience of others when it may be procured so easily and cheaply in the form of books and papers is practicing one of the most wasteful forms of economy.

With a smoker and veil they are ready for work with the bees, which should preferably be of pure Italian blood, domiciled in a hive that is of simple construction and easy to manipulate. The one who has a genuine case of bee fever will probably handle his bees more at first than is good for them, but the knowledge gained will more than make up for any loss in that direction, and with experience will come the cure for too much zeal.

There is much more in a colony of bees than appears to casual sight. It will afford to the intelligent mind a rich field of thought and an insight into some of the deepest mysteries of nature. The relation of bees to plants, as they carry the fertilizing pollen from one blossom to another, opens up a new world to the thoughtful and enthusiastic beekeeper and every plant that grows acquires new interest to his eyes thereby.

Having secured your crop of honey, remember the injunction of Solomon, "My son, eat thou honey, for it is good." If honey could be restored to its former place as a common article of diet there can be little question that the general health would be greatly improved. Sweets of some kind are really needed by the system, as is shown by the almost universal craving for them, especially among the young. Late scientific research has given testimony to their great value. Yet the excessive use of sugar has caused serious diseases. Honey is much more easily digested and assimilated than cane or beet sugar and is therefore a much more healthful sweet.

The free use of honey will do much to lighten the labors of the housewife by replacing the toilsomely made jellies, jams and preserves. At the present prices it is economy to use honey freely, as it will replace to a considerable extent the more expensive butter.

If the product of your bees is more than your own family can consume, let me urge you to give a little careful thought to the disposal of it. It has been said that farmers more than any other class allow others to fix the prices of both what they buy and what they sell. This is particularly shown when it comes to the disposal of any of the side products of the farm, such as honey.

You would have little respect for the judgment of the man who would sell his crop of grain at less than the market price, yet it is a common experience to see farmers selling their crop of honey at two or three cents below the market price, payable in trade at that. This results not only in loss to himself, but through demoralizing the market, in a greater loss to others. Do not think that because bees "work for nothing and board themselves," as the saying is, that your yield of honey is all profit and that whatever you get out of it is clear gain. Sit down and figure up what your bees have cost you in time and money, through good seasons and bad, and see if the honey you have received in a particularly good season is all to be counted as profit, and if there is any reason why you should give it away if it was.

Aim to produce honey in marketable form with as little labor as possible. To this end use nothing but standard appliances, which may be had from any dealer in beekeepers' supplies. For surplus honey use the standard section, 4 $\frac{1}{4}$ inches square, and, unless your honey is all to be consumed at home, be sure to use separation between.

Leave others to experiment with fads in the size and shape of sections and the pattern of separators. Remember that what may be proper for the specialist may be altogether unsuited to the small producer.

Familiarize yourself with the principal honey yielding plants of your locality and remember that the bulk of the crop from each of them is gathered within a very few days. As there are seldom over three or four sources in any locality from which honey may be expected in any quantity, this means that unless you are prompt and do your work at the right time, much honey will be wasted for want of room in which to store it. Very often the best part of the honey season is past before boxes are put on the hives. This is not only a waste of honey but induces excessive swarming, which is something to be guarded against.

Do not worry about moths. If the bees are in proper condition they will take care of the moths. No colony in good condition was ever destroyed by moths, and to say that the moths have destroyed your bees is only a confession of your own ignorance and neglect.

The golden rule of beekeeping is, "Keep your colonies strong." Remember this, do the right thing at the right time and you will be successful if there is any honey to be gathered.

HORTICULTURAL DEPARTMENT.

FRUIT ON THE FARM.

By Hon. Amos F. Moore, Polo, Ill. Read before the Cook County Farmers' Institute.

When I commenced farming in Ogle county in 1856 I thought I would try and raise some fruit for the use of the farm. I proposed to plant fruit trees and small small fruits and at the same time I am well aware there have been many failures in the propagation of fruit trees in northern Illinois.

I am also aware that the man who advocates the raising of fruit on a farm is dubbed a crank. I know this from experience. The farmer who wishes to raise a good crop of corn will put his ground in fine condition and see that he has good seed and of a variety adapted to his locality. This same principle should apply to fruit trees.

Never buy your trees of a stranger, for his trees are to sell, and as soon as he gets his hands on your money he is gone.

The severe winters are very trying to our fruits, and many trees are killed each year. But who ever heard of a hard winter killing a tree peddler. He comes out in the spring all smiles, fat and hearty. Last spring he brought out the maple peach, a peach grafted onto a maple root, and sold a large number at two dollars each. This spring he will bring us something else just as worthless.

On every farm there should be a lot for berries, not in the garden, but near the house and by itself. The rows should be ten or twelve rods long. After the ground is well prepared mark off the rows with a single shovel plow, four feet apart for strawberries and eight feet for blackberries and raspberries. Then cover with a cultivator and tend them about three times a week with a cultivator, for the average farmer will not hoe.

Three rows of each kind of fruit will be all that is needed for home use.

Buy of some home nurseryman of good reputation, who can be found should your trees prove false to name.

The fruit trees, plants and vines in Illinois, with the land and fixtures, are worth not less than sixty millions of dollars, and I regret to learn that some of our Farmers' Institutes do not consider the subject of horticulture worthy of discussion at their meetings, and at the same time these counties are paying from ten to twenty thousand dollars annually for fruit trees and vines and a large per cent of them are worthless.

We must plant our fruit trees upon land that is well drained by nature or by tile. In low, rich soil the tree will grow too rapidly and will not live to bear good fruit. When the young trees are ready to plant do not lay them down and let the sun and wind dry them. Cover with soil or mulching. Plant the trees twenty-five feet apart each way. I would not put any water on them after planting. If they have been puddled in thick clay soak it off, so that the young roots are free to grow. In pruning the young trees cut back the limbs in the same proportion that the roots have been severed. Cut smoothly the ends of the roots that have been torn or broken off. Do not let the branches start near the ground. Train the limbs one above the other, and avoid all large crotches, as they retain the moisture and soon decay, and the limb falls to the ground. (The nurserymen of forty years ago thought the branches of fruit trees should start near the ground, but they all went down.)

Cultivate your orchard five or six years. Plant corn or potatoes and give thorough cultivation, then seed to red clover.

Do not force the young trees; it is better for them to grow slowly. The first of August is best to mulch the young orchard, in order to arrest evaporation of the moisture in the soil, as the extreme heat of this month is detrimental to young trees.

When the blossoms are falling start the sprayer. I use four ounces of London purple to fifty gallons of water, adding two gallons of fresh milk lime—strained. Spray next when the fruit is as large as peas; then again when as large as walnuts. The lime keeps the London purple from turning the leaves brown. While the spraying is going on keep the stock out of the orchard, except pigs.

This spraying is the keystone of my success in fruit culture. For pears, plums, cherries, grapes, etc., I use the "Bordeaux Mixture," 6 pounds blue vitriol, 4 pounds fresh lime strained, to 50 gallons of water. I mix this fungicide with the London purple for scab on apples. Some years ago I lost all my snow apples by the scab. Now, with the use of this mixture, they grow fair, smooth and large. The enemies that attack our fruit trees are legion.

My orchard pays about fifty to one hundred dollars per acre per year on an average.

I do not spray while the honey bee is at work gathering its portion of sweetness and at the same time pollenizing the fruit for us. A lady who was a native of the Sandwich Islands said to me that the people on the Islands, in the spring, when the fruit was in blossom, all went out into the trees with fine camel hair brushes and carried the pollen from blossom to blossom. A sea

captain was much interested in their work and remarked to them that in America we have a little bee that performs that task. They said to him, please bring this little bee.

For summer fruit I plant Nonpareil, known to many as Early Nonesuch, Duchess of Oldenburg. For fall the Wealthy, Haas and Snow. For winter apples I have a number on trial.

At our Northern Illinois Horticultural meeting in Polo, in 1896, J. C. Plumb, of Milton, Wisconsin, a delegate to our meeting, exhibited some native winter apples, the Northwestern Greening. It was of good size, fine flavor and a long keeper. Also the Windsor Chief, a fine flavored red apple. These apples have been grown in Wisconsin for seventeen years. This is what Mr. Plumb reports. A good, hardy Wisconsin winter apple I think would be worthy our attention. Are we not paying out thousands of dollars for apples that are being shipped from eastern states to the west? Would it not be economy to save our money by raising our own apples? We have an experimental nursery station near Lanark, at Nursery, also one at Marengo, Illinois. You will find all new fruits on trial at these stations, and I would advise you to plant nothing unless recommended by the directors of these stations, whose instruction would be far more profitable than that of a stranger.

Every farmer should attend the Horticultural meeting next winter and get posted up to date on the new fruits.

Now I want to tell you of one of my neighbors who took great pains to make a selection of many choice varieties of fruit. The trees grew finely, and after a number of years bore fruit, when he found every one of them to be Whitney's No. 20. Well, he might have done worse.

The farmer can have fruit on his table in some form three times a day three hundred and sixty-five days in the year, with very little labor. Today science tells us that fruit should be eaten as an aid to digestion of other foods, much more than it now is. Cultivated fruits, as pears, apples, grapes, cherries and strawberries, etc., contain on analysis very similar proportions of the same ingredients, about one per cent being malic and other acids. Now acids and pectin in fruit peculiarly assist the acids of the stomach.

With very little extra labor and expense we have on our stock farm a supply of strawberries, several varieties of raspberries, blackberries, plums and grapes, with apples by the crate, wagon-load and car-load, and I believe that in the near future Northern Illinois will raise all its own fruit for home consumption. Today one barrel of Northern Illinois grown apples are worth two barrels of New York apples, as we get them from the market for family use.

What is more beautiful than an orchard when it is in full bloom, filling the air with its fragrance? I will tell you what I think is more beautiful. It is when the orchard is full of ripe and highly colored fruit, with its branches bending to the ground.

Mr. Moore presented a sample of San José scale sometimes found on apple trees, and asked the farmers to examine it through a microscope which he brought for that purpose. He advised the planting of new orchards every twelve years.

MISTAKES IN HORTICULTURE.

By J. Webster, Centralia, Ill. Read before the Effingham County Farmers' Institute.

It is not an easy task to define forces in their scientific sense, but that forces exist that have a strong bearing upon American agriculture, we all know. Each one of these forces, like the forces of nature, are causing it to move in one line until an opposing force causes a deviation.

The restless spirit and tireless energy characterizes the times and prompts men to seek ambition or wealth at the expense of others.

It is said that the recent famine in British India country was not a food famine, but a financial famine. Plenty of rice, and yet the people could get no rice to eat. In this and every country the poor man's poverty and vices are his destruction.

One of the impelling forces in agriculture is the vast sums of British capital seeking investments in this country. Investments in lands, speculations, railroads, mining, manufacturing, and still it reaches out after our cheese factories in the East, and our cattle ranches and sheep industry of the West—every place where capital may be invested is closely scrutinized by the agents of English capitalists and syndicates for the express purpose of drawing from this country as large a rate of interest as the traffic will bear.

If these facts are true, the conditions to which this force is fast drifting us, to a condition closely akin to foreign landlordism. If in 1891 it took twelve million dollars worth of our low priced food products produced by American farmers, to pay the interest on the investments of these syndicates, had we not better look a little out.

The question arises, would we not be better off if these syndicates would not loan us a dollar, and throw us entirely as a people upon our own resources.

The problems that they who live on farms are ever seeking to solve, is reducing expenses, and increasing income. It is the same whether they be engaged in dairying, stock raising or ordinary farming, orcharding, gardening or small fruit growing, but we always feel sorry for the man who takes a nice calf at five weeks old and sells it to the butcher or ships it to the city, if he only owns or rents forty acres.

Farming is a business which must necessarily go on forever. Agriculture in any country which deserves to be called up-to-date, must be permanent and progressive, or it can not be profitable. Live stock is the foundation of profitable agriculture. It is the one thing, above all others, that can make it permanent and progressive. Any adequate consideration of progressive agriculture should be broad enough in its forecast to demand and insist on crop rotations, improvement of live stock and a broader vision than a one year lease of plans for future operations.

Education is one of the foremost of the impelling forces. Although Emperor William, of Germany, may fret and stew, and under the pretext of being afraid of introducing American insect pests into his Empire, go back on our good looking Ben Davis apple, we will still persist in growing them and pushing them with persistent method and skill right up under William's nose until he becomes familiar with its good qualities.

Farmers' Institute meetings, societies of stock breeders, horses, cattle, sheep, swine, dairy and horticultural societies are all factors to impel us onward in the evolution, and are all well calculated to create and awaken ambition and thirst for something better.

Politics is another of the forces, in spite of the fact that statesmen generally advise him to stay out of politics. This is one of the forces that the American farmer has to battle with, although the farmer and farmers' organizations, as a rule, have not been the success they should be.

In political camps the Latin motto is seldom carried out, "The welfare of the people is the highest law." This motto is pretty generally reversed and is translated to read, "The welfare of the party and the individual's chances for promotion to office, is the highest law." The history of all legislation bears hard on this point. Nearly all the gains that agriculture has made in the legislative halls of every country has been strongly opposed. Agriculture has fought her way inch by inch this far, so she must in the future. The whole style and method of doing business has been constantly undergoing an evolution since the early days of trade and barter. The tillers of the soil must put themselves in line with the tendencies of this age. Coöperation is a force not to be much longer overlooked. It is almost an unknown word among farmers, and as a factor in agriculture is but little understood. This is unfortunate for the farmers, for in coöperation lies a hidden force whose value in business is tremendous. It is the wage earning power. It is the dividend

creator. It is the developer of modern progress in the world's evolution. It is the union of dollars against dimes, and possesses the power and strength of a mountain avalanche or an encroaching flood. How very little of this mighty leverage, coöperation, is successfully conducted for the benefit of those engaged in agriculture and horticulture. Here and there we see a little feeble attempt at coöperation in shipping associations and creameries, but how comparatively few stand by each other through thick and thin, as do the large moneyed corporations. The trouble is that farmers, as a class, do not stick together. Petty conflicting jealousies separate them. A large majority of farmers do not seem to be able to comprehend how any man can do continuously kind acts for the benefit of his fellow man. They are too suspicious where they need none, and not enough suspicious where a good deal is needed. A successful coöperative business can only be conducted where this sentiment prevails, that what is for the good of one must necessarily be to a greater or less extent the concern of all.

The French peasant or small farmer understands the advantages of coöperation. His small tract of land gives him through this great force the means of existence, he owns the soil he tills. Every inhabitant of a French agricultural community is the proprietor of something, they combine for common and mutual interest. They organize syndicates in the rural communities for buying at wholesale prices; they unite for the purpose of cultivating the soil and making up of teams. Every community has a field for grazing, well fenced, which is common property on payment of a small fee. After harvest all the unfenced fields are common property until seeding time. The mistakes of horticulturists are even more costly than those of ordinary farmers.

It is a mistake to think strawberries and other berries can be grown profitably on land costing \$50 per acre and at present prices of labor send the products to market by express, pay two cents per quart for picking and almost another for boxes. It is like growing apples for ten cents a bushel. You can't do it and come out on the safe side.

It is a mistake for any man who hires labor, whether it be one hand or twenty, to quarrel or use harsh language. If they fail to execute your orders as you wish, quietly but firmly point out the errors, and let them understand that carelessness and willful indifference will not be tolerated. Mix with them in their time for rest and recreation and let them feel and see you do not wish nor intend to exact more labor from them than you would be willing to do for them were you in their place.

It is a mistake to hire a man to do your work, and at every possible opportunity seek to embarrass him by showing to him that you come of a little better stock, and are therefore made out of a little better material, which accounts for your intelligence and entitles you to more consideration.

It is a mistake not to show to your hired help that you are capable of appreciating any little acts of kindness shown yourself or family, or any of the domestic animals about the place; also their disposition to save your property and do you an honest days work.

It is a mistake to suppose that scolding improves your own boys or hired man. Hired help that you have to watch all the time and scold every day is like a poor cow—not worth its feed. You can not make a whistle out of a pig's tail.

It is a mistake to attempt to grow a commercial apple orchard on new timber or prairie soil that has never been previously plowed and cultivated—by 2 or more seasons' cultivation subdued from its wild condition.

It is a mistake to suppose there are any chances to succeed if you dig holes wide and deep with a spade in untilled land. Hand labor is worse than wasted and can not pay under such unnatural conditions.

It is a mistake not to lay off the ground accurately with a plow both ways previous to planting, where it is possible to do so. It pays to stake off the ground accurately on two sides, and plow strips eight feet wide, followed by a subsoil plow in each furrow before or after planting.

It is a mistake not to have sufficient help to push your tree planting right along when once you commence. Three hands can push the work along faster in proportion to the cost than two.

It is a mistake to purchase your trees for that commercial or home orchard from an agent of a New York or Ohio nursery, and suppose this agent is more interested in selling you good trees true to name than the man who grows trees and pays taxes into your own county treasury.

It is a mistake to suppose an agent selling trees from a distant nursery is better posted as to what trees will suit your soil, climate and environments than a nurseryman in an adjoining county, who has devoted 30 years or more of his life to studying the problems of tree growing and supplying the wants of tree planters in your own State.

It is a mistake to suppose because a man is a good talker that he is any more honest than your own local nurseryman—although he may talk very learnedly about French crab stocks, whole root and piece root systems of propagating.

It is a mistake to suppose an agent will give you a better deal than your nearby nursery because he claims to have sold a big bill to several prominent men in your county, including the sheriff. Prominent men, judges, lawyers, and even sheriffs, show very poor judgment in the purchasing of nursery stock quite often.

It is a mistake not to use good common horse sense in the purchase of nursery products as you do in other matters, and whenever you can purchase of the varieties, age and size you have decided you want in your own State near-by, let agents from a distance severely alone—such a firm in your own county or State can hardly afford to deceive you in regard to the quality and price of stock offered you.

It will be no mistake on your part to use at least as much caution and business judgment and common sense as you would in purchasing a calf or in selecting seed potatoes, oats or corn.

It is a mistake to suppose that seedling fruits are necessarily hardy because they are seedlings, or that budding or grafting ever has or ever will improve our fruits. Seedling trees or plants of any kinds of fruits have necessarily all degrees of tenderness and hardness. We select the hardiest bud and graft to perpetuate the best nature gives us—not to improve it.

It is a mistake to plant too many varieties in a commercial apple or peach orchard. Varieties in a commercial orchard should be limited to a few varieties, including those which succeed best in the vicinity and are most in demand in the markets. The judicious, careful selection of varieties is a most important element in financial success of an orchard management.

It is a mistake, we think, to plant orchards of 40 to 100 acres entirely of one variety, if there is any advantage to be gained from the complex laws of natural polenization. With but one variety if under unfavorable conditions at blooming time you can not obtain as good results as if every 5th row was a different variety.

It is a mistake to suppose that after your trees are planted properly and varieties selected with good judgment, further care and expenditures of money to protect them from rabbits, field mice and insect pests is not absolutely necessary.

It is a mistake to plant a commercial orchard without first well considering every phase of this expense question that is necessary to be done to ensure success and the available competent help that may be had.

It is a mistake to plant more than 50 apple trees per acre, or more than double that amount of peach, pear or cherry, and to sow the ground down to clover, red top or timothy after the 4th year is the height of folly, and then imagine all that is necessary to be done is to drive along the road in a carriage and admire it for regular intervals for six years and sell the crop at good figures to the first apple buyer from Ohio or Boston.

It is a mistake to not do any pruning on a commercial orchard for 10 or 11 years, or until after the first or second full crop and then learn that it is necessary to prune and proceed to trim heavily and in one year try to correct the mistakes of ten years.

It is a mistake to sow any kind of grass or small grain in an orchard—or even clover—for more than two years without plowing.

It is a mistake to give an orchard good care and thorough cultivation for 7 or 8 years and then sow down to red top grass or timothy to check the wood growth and send it to bearing.

It is a mistake to let the orchard that has been well cared for up to bearing age take care of itself at this stage, grow up in rag-weeds and Spanish needle to be mowed down in August and left on the ground to increase the risk of fire.

It is a mistake to suppose your apple crop will be of no better quality if thoroughly sprayed twice at the proper time, and the ground is kept loose in spaces between the trees by frequent disk and harrow cultivation both ways twice a month through late spring and summer.

It is a mistake to suppose that after your trees have commenced bearing that you can no longer help them by cultivating the spaces one way in stock peas or soja beans. Try preparing a strip 14 or 15 feet wide in spaces one way and drilling in stock peas or soja beans so that you can cultivate them twice, and see how nicely they will shade the ground by the middle of July and build up your trees and the ground they stand on.

It is a mistake to suppose, if your orchard adjoins a railroad, that you can not protect yourself at a very little expense and loss of time by preparing the ground in good shape early in June and drilling a strip in black or Niger stock pea or soja bean, or some other leguminous nitrogen-gathering plant, and in the end find it more pleasant and profitable, than an orchard partly destroyed, litigation and trouble with the railroad company.

In conclusion, it is a mistake to suppose that ground packed hard and impoverished with grass or grain, or allowed to grow up in tall weeds, is a suitable place for fruit-bearing trees, and that such conditions will ever produce first-class marketable fruit.

APPLE FARMING.

By Henry A. Aldrich, Neoga, Ill. Read before the Cumberland County Farmers' Institute.

SELECTION OF VARIETIES.

One of the most important matters connected with the making of an apple orchard is the selection of varieties. There are more questions asked upon this one point, more advice given, and more mistakes made than upon any other one subject connected with apple growing. It is best in planting for market not to have too many varieties, especially a farmer. Do not plant a variety simply because it does well in another part of the country. We have yet to learn that there is no one variety of apples suitable to all sections of our great country. Take the Ben Davis for instance. There are very few sections that can grow a finer Ben Davis than Cumberland county. Extreme Southern Illinois can not do it; neither can Tennessee, Michigan or New York. And the buyers are beginning to find it out, too. The Jonathan is a good apple for this section, and no one will regret planting Grimes' Golden, although it is a yellow apple. Those last named must be picked early and either sold or go right into cold storage.

Willow Twig and Minkler will complete the list of all the varieties that a farmer need plant. Have left out all summer varieties because a farmer has no business planting any, as he is very busy at that season of the year with other things and something would have to be neglected. We often err in selecting varieties just because they are nice growers in the nursery. The main thing that first started the Ben Davis on its big boom was, no doubt,

this trait. The nurseryman has found that the tree which makes the straightest, most rapid and cleanest growth in the nursery is the one that sells the best, and that is the one off which he raises the most, and consequently pushes his sales of that variety the hardest. Who is to blame for this? Not the nurseryman, for he is simply supplying the market with what is demanded. So, do not be disappointed if, when your trees arrive from the nursery, they are not all smooth and straight-bodied, for some of our best varieties are not "built that way."

ABOUT CUTTING OF CIONS.

There is one thing that the future will look after more closely than we do, and that is the indiscriminate cutting of cions. We all know that there are hardly any two trees just exactly alike in an orchard, either in the amount of fruit they bear or in vigor of growth. We know, too, that like begets like—like father, like son. There are some trees that can not be made to bear by any amount of care and cultivation. Will any one contend that cions cut from such a tree will make a profitable orchard? And yet it may be true to name and have all the other characteristics of that variety except production.

It is always best to try first-class trees. Those which are of medium size for their age—shapely in body and head; stocky, with clean trunks and plenty of roots, free from borers and root lice. The presence of the latter can always be told by the distorted, knotted roots, sometimes covered with a white, mouldy or cottony-looking substance. Do not select a tree in the nursery merely for its large size. Remember, that the toughest and best trees are usually those of medium size.

THE AGE OF TREES.

We are all inclined to buy trees too old, rather than too young. It is a characteristic of the American people to try to rush things, and we argue with ourselves that if an apple tree bears at 10 years old, the older they are when set the nearer we are to a crop. But the trouble is a man has to live two generations to correct such mistakes. Many of the freer-growing apples are large enough when two years old, especially if grown from beds; but as a general thing three years' old is the proper age to set. While one should endeavor to buy trees as low as possible, it does not pay to buy trees simply because they are cheap. It is not profitable to patronize any "bargain counter" in selecting trees for an orchard that has to remain for a lifetime, if not longer.

For this section of country fall planting is considered the best. It almost makes one season's difference in the growth, as the trees become established during the open weather of fall and winter, and they are growing in the spring long before the ground is in condition to plant. Thus not only assuring a better growth the first season, but by getting a firmer hold on the soil are the better able to withstand the summer drouth. There is always more time in the fall, and the soil works better than in the hurried days of spring work. But the young tree planted in the fall should always have a few shovelfulls of earth mounded up at its base to keep it from being swayed about by the winter winds, and it also serves as a slight protection against the rabbits, as they do not like to be quite so prominent when they are doing their work.

We always err in setting trees too close together instead of too far apart. In fact, we never hear of an orchard being set too far apart. Trees are great feeders and sometimes extend their roots way beyond their tops in every direction. Thirty feet each way is the favorite distance, but not less than thirty-three is better for the more spreading kinds.

PREPARING THE LAND.

Fit and plow the land as good as possible before you set the trees, for you will never have as good a chance afterwards. Level culture should be adopted

from the start unless it is necessary to drain off surface water. Dig the holes by hand and loosen up the earth in the bottom and throw in a few shovelfulls of the surface soil before putting in the tree. Trees should be set about an inch deeper than they stood in the nursery row to allow for the settling of the loose earth. Be sure and stamp the soil down solid while filling the hole, but do not bruise the roots in doing it; leave no air spaces in among the roots to dry them out. Be careful to cut away all roots that are injured or broken; cut just back of the bruise. In trimming the roots turn the tree upside down and cut from the center outward, so that when the tree is set the sloping cut on the end of the roots will be facing downward, as they are not near so liable to rot and will heal over quicker. Trim the top back even more than the roots, if any. If cut back to four or five buds it will be all the better. Young trees that are left with too much top do not start well. The fear of cutting too much being more often the cause of error than that of cutting too little. Always trim so that the last bud left is on the outside instead of the inside, so that the new growth will be outward, leaving the center hollow and free from entangling growths. Many a young tree is lost and ruined from too much head growth.

For the first five or six years cultivate in corn, potatoes, beans, or any crop that has to be cultivated thorough and frequent—especially the early part of the season. Never seed to timothy. Sowed crops should always be avoided. Oats is the worst crop which can be used for it stands on the ground so long and pumps out the moisture at a time when it can not be spared. You can not afford to let your bearing orchard go uncultivated. That day has gone by for the successful apple grower. It is not necessary to turn the soil every year just as though you were plowing to plant potatoes or corn. It is better not to. By commencing early in the season all the plowing it will need can be done with the disc, or what is better, the cutaway. They make the latter now so that it can be spread apart in the center about four feet on purpose for orchard cultivation. After the first good cutting in the spring it needs nothing but the smoothing harrow or any implement that will keep the crust broken. If you neglect it and let a crust form, of course you will have to cut it again. The main object is to keep two or three inches of a dust mulch. If, after we are through cultivating for the season, we could sow some crop which would shade the soil and keep it moist during the rest of the warm weather and form a covering crop for the winter, it would undoubtedly be a benefit.

SPRAYING RECOMMENDED.

And now we come to one of the fine arts in fruit growing, and that is spraying. It is bound to take its place along with cultivation, pruning and other important operations of the apple orchard; and the apple grower who does not spray is bound to be left behind in the race for perfection, for the fruit that a few years back would have been taken without murmur is now thrown out. But what do we spray for? We spray for insects, pests and fungous disease; or rather, to come down to more practical details and bring it nearer home to every apple grower of Cumberland county, we spray for the codling moth or apple worm, and the scab. Spraying is not a cure-all, but rather an insurance. After your buildings are on fire it is too late to insure.

As soon as the eye can catch sight of the effects of the worm or the scab it is too late to spray for any effects on that crop. Some seasons the unsprayed orchard will turn off a crop of as smooth and perfect apples as the one that was sprayed. But the one who sticks right at it and sprays every year is bound to come out ahead, and it is most sure to be one of those high-priced years.

In spraying for the apple worm we use one-fourth of a pound of Paris green to 50 gallons of water, and in spraying for the scab the Bordeaux mixture, which consists of 6 pounds sulphate of copper and 4 pounds of lime to 50 gallons of water. As a general statement one may say three sprayings are all we need to give. One just before the blossoms open; one just as they drop, and the other one about ten days later.

The first is for the scab alone and the last two are especially for the benefit of the apple worm. In all three sprayings use a combination of the Bordeaux mixture and Paris green. Whether or not it will be necessary to spray again will depend on the season—the operator must be the judge of that. But, as we remarked before, as a general thing, the first three are all that need to be given. The formula for making the Bordeaux mixture has been published so many times that all must be familiar with it, and we will not take up the time going over it now.

PICKING AND PACKING.

Picking should begin when the apples have arrived at their full size and color. They should be picked in half-bushel baskets and put in long, narrow piles in the orchard and covered with fodder. Do not let the sun beat on the piles, even for an hour if possible to prevent. In packing apples they should always be faced upon one end of the barrel at least. This facing is done by selecting apples of uniform grade, placing them in rows on the lower head of the barrel, with the stems next to the head. The balance of the barrel can be packed by turning the apples in from a round-bottom, half-bushel basket with a swing bale. After every basket is emptied the barrel should be slightly shaken to settle the apples, filling it up until a little above the chimes, and then the other end is put in with a press—the barrel turned over and stenciled on the faced end. This is the end that the buyer is supposed to open.

In theory there are two things that control the outlook for the fruit grower, and that is the man himself and the market. Few people realize what a personal thing success is. And yet every one knows that any two persons, placed in the same conditions and the same surroundings, everything being equal, will in time come out with entirely different results in business. And fruit growing has settled down to a regular business, of which the most important requisites seem to be love of the calling, unflagging energy and sterling honesty. It is more important, therefore, that the first tillage, pruning and spraying should be applied to the man and not to the land or to the crop. Do not think hard of your neighbor if your apples are not as good as his, and lay your failure to your luck, when it was his superior skill that made them so, and what is the use of any skill if it is not of the superlative kind. Do not get discouraged when the off years come and neglect your orchard. The years of good crops are most always years of low prices. This means that we let the seasons and other circumstances absolutely dictate the bearing time of the orchard, and when one man has a crop every other man has a crop.

Our buyers are ready and willing to pay for quality, and he that keeps it will sell every time. Better grow half the quantity and double up on the quality. On the other hand there is always a surplus of the ordinary. In fact, it is the ordinariness of it which makes it a surplus. It is indisputable that there is always a demand for the best. There is never enough of the best to glut the market.

And another thing: If the Lord gives you one or two good crops without much work, don't get a swelled head and think that thing is bound to happen right along because you are one of his favorites, for sooner or later He will let you down hard. The Lord helps those who help themselves.

ENEMIES OF OUR FRUITS.

By J. Schenck, M.D.D., Mount Carmel, Ill. Read before the Wabash County Farmers' Institute.

As knowledge increases we become more and more familiar with the fact that it is the small things that accomplish the greatest results. Microscopic organisms cause the diseases which are the greatest scourges to the human race. One microscopic bacterium produced a disease in the potato which caused a failure of that crop in Ireland; a famine resulted which finally led to a war. Our fields, orchards and granaries are teeming with insect enemies which annually destroy billions of dollars' worth of our products; yet it is

done so constantly and gradually that we scarcely comprehend its immensity. Many of these pests could easily be controlled or exterminated if we would only take the pains and time to combat them at the proper stage. In order to do this successfully it is necessary to know the life history of our enemy. In the following paper I will attempt to give a brief account of three common and very injurious insects. The object in selecting these is that they are not generally well understood except by the professional entomologist:

I will speak first of the fall web worm (*Hypantria textor*, Harris). About the middle of June, or a few weeks later, we begin to see the outer ends of the branches of many of our fruit trees, and also a number of our forest trees, adorned with a smoky-looking web. The green or pulpy portion of the leaves, as far as the web extends, has been eaten away and only the branches, damaged fruit and skeletons of the leaves remain. These webs enlarge daily until finally they may grow to be more than a yard in diameter; and one tree may have as many as a dozen or twenty such burnt-looking places in its top, representing so many colonies. This is the work of the fall web worm, whose life history is as follows: During May a small milky-white miller, which measures about one inch across the expanded wings, deposits a broad patch of greenish-looking eggs on the under side of the leaves. The insect flies only at night, and, therefore, is seldom seen. In the course of ten or fifteen days these eggs hatch out a brood of tiny, hungry caterpillars, which at once begin eating the soft parts of the leaves, and at the same time spin a web over the entire field of their work, so that they are constantly under its protection. When full grown they are about one and one-quarter inch in length; a dirty yellow or slightly greenish color, mottled with darker dots and dim stripes; the whole back is covered with long yellowish hairs. During September or October the caterpillars leave the tent, and, after a short spell of general foraging, descend to the ground, where they bury themselves a short distance under the surface of the earth or under rubbish, and soon enter the chrysalis stage and remain so until the following spring, when this stage is changed and they again come forth as white millers. During recent years this insect has been constantly growing more abundant; I first noticed it several years ago on trees in Mount Carmel, but it is rapidly spreading to the orchards and borders of fields in all directions until there are probably few farms in this county that are not infested by it. It is seldom seen in forests away from fields. It is a voracious feeder, and will thrive on a great variety of trees. I have seen it on the apple, plum, cherry, pear, grape, elm, oak, ash, hickory, willow, box elder, beech, sycamore, currant, blackberry, mulberry, osage orange, white poplar, quince, persimmon, black gum, sweet gum, cotton plant and wild cherry. The web is an advertisement by means of which the presence of these insects is readily detected, and if the twigs on which they occur are early cut off and burned the whole colony is at once destroyed. This treatment is so simple and so efficient that it is unnecessary to mention any other. If each person would clear his own premises of these tents when they first make their appearance it would be a very light task; it would save his trees, cause them to look better, and the insect would in a short time be entirely exterminated. The caterpillar is readily distinguished from other tent-making insects by the fact that it does not leave the tent to feed, but first spins its web over the leaves and then devours them. However, there would be no serious mistake in destroying all insect tents found on our trees. This insect is rapidly increasing, is capable of doing much damage, is readily destroyed, and should receive attention at once.

THE WHITE ANT.

The white ant belongs to a family of insects that is one of the most ancient and at the same time most interesting group of animated beings. They constituted one of the characteristic features on this planet during the carboniferous period, the time during which our coal beds were being formed. They are usually classed with the ants by those not familiar with modern classifications, but they belong to a wholly different order of insects, the Pseudoneuroptera, and are closely related to the mosquito-hawks and may-flies, which claim a much higher antiquity than ants do. White ants are classed with bees and wasps in the Hymenoptera. They are readily distinguished from the common

ants by the fact that the body is not joined to the head by a slender pedicle, or waist, as is the case in all true ants. Yet many of their habits are similar to those of the true ants. Many of the species live in mounds or hills, frequently of great size, which they construct and use as a home. As is the case with many of the true ants the descendants of the same parents are differentiated into several social castes and classes. In the same brood there are soldiers and workers, both of which are blind and sexually undeveloped; then there are kings and queens (males and females), who for a few hours bear wings, and whose development is in every way perfect and who become the parents of future generations. The workers do all the work and provide the food for the colony, while the soldiers stand guard over them and the home and furiously and fearlessly attack every enemy which approaches. The kings and queens do nothing but propagate the species; the care of the young family falling to the workers. They possess a notoriously ravenous appetite; this is, perhaps, largely due to the fact that the alimentary canal of many of the species of white ants is the home of a surprisingly large number of species of parasites (belonging principally to the order protozoa), which they must supply with nourishments. Their food consists principally of woody pulp and other ligneous matter, with such of the low organic forms as are mingled with these, which they seem to emulsify and prepare for their parasitic inhabitants. At the present time the white ants, or termites as they should be called, are principally found in the tropics; only one species so far as I am aware having been found in our State; this is the yellow-footed termite (termites flavipes, Kollar). This is ant-like in appearance, of a yellowish or dirty white color, usually the tiny feet are light yellow; they are about one-sixth of an inch in length. During the short migrating season the kings and queens (males and females) bear wings which are more than half an inch long. Migration appears to be a period of courtship and usually occurs in April and May in this climate. At such times they go forth in great hordes, but soon shed their wings and commence the duties of life in good earnest. On the 30th of last April I witnessed such an exodus from an old house in Mount Carmel. They emerged from the stair casing in the hall; the house had wooden underpinning and was near the ground. When doors leading into the hall were first opened the atmosphere and walls were black with flying termites; there must have been a solid half bushel of them, and the exodus continued for more than three hours after the doors were opened. No doubt the timbers in this house are greatly damaged, and if these insects are not checked or exterminated the whole building will be destroyed by these ligniperdous insects. They have been known to infect buildings, furniture, fences, trees, shrubs, grape vines, herbaceous plants, garden vegetables, collections of books and papers, bolts of cloth and brick walls. They prefer to work in dark, damp places; light appears to be especially injurious and offensive to them, as they always work under cover. So opposed are they to light that when they are at work on the surface of an object they invariably cover their field of operations with a kind of mud or clay under which they construct passageways leading back to the territory. In this manner they will often cover the surface of fence palings, boards, posts, walls or trees with their protective coverings. But they do the most serious damage when they infest the inside of these objects. They frequently riddle the entire interior of a piece of furniture, large pieces of timber or the walls of a building with their galleries until it is so soft that one could push his finger into it, or until it is so weak that it will not bear its own weight, and yet there will be no external evidence of its damaged condition. There are a number of instances on record where wooden bridges have unexpectedly given way, with serious results, from this cause when externally they appeared to be entirely sound.

DESTROY DWELLINGS.

Prof. S. A. Forbes, our State Entomologist, reports a number of instances that have occurred in our own State where dwelling houses and other buildings had become so seriously infested that they had to be abandoned and destroyed. Some of our State documents have been seriously damaged by this species of termite, both while they were at Vandalia and since their removal to Springfield. In the latter instance they appear to have penetrated the foundation

walls, which are eight feet thick, and infested four of the basement rooms in which were stored valuable documents. They usually enter bookcases by tunnels which they made through the posts of the cases where they rested on the floor; when they came to the books they tunneled through them, and among them, in all directions. So carefully hidden was their work that it was not detected until four rooms had been entered and much damage done. This insect is thought to be a native of the greater portion of the United States, increasing in abundance as one goes southward; it is usually found in woodlands under decaying logs and old stumps. But as these places are cleared up and their homes are replaced by fences and buildings, they attack these, and it is natural to expect that they will constantly become more injurious as these changes continue to occur. At least, such is the case in this county. I have at times found this insect in decaying timber, in this vicinity, for more than twenty-eight years, but it is only during the few last years that it has become damaging to fences and buildings; and I am convinced it is only a matter of a short time when it will be a very serious and obstinate pest. It is common on fences, especially paling fences, and posts. It seriously infests telegraph and telephone poles, especially where the buried ends of these have not been covered with coal tar before being put into the ground. The object of speaking of them at this time is to call attention to the probable danger from them in the near future, so that they may be held in check while they are yet in the more manageable stage. The treatment is efficient, cheap and simple. Gasoline appears to be the best remedy which we possess, but kerosene, benzine and carbon bisulphide are also good; they should be poured into the galleries where the insects are at work so as to saturate the grounds, timbers and their nests. Boiling water is also an efficient remedy. Where necessary the rubbish should first be removed, so that the remedy can be thoroughly applied.

During the past year we have found in Mt. Carmel, Ill., the San José scale (*aspidiotus perniciosus* Comstock) in a strong and rapidly increasing colony. The State Entomologist was at once informed of the discovery. In due time he sent specialists to look over the extent of the infection, and to destroy such trees as were thought to be fatally injured and to carefully treat those that could be saved. But the chances for infection from the nurseries are so numerous that it will be a matter of great surprise if this is the only point in the country that has been infected. Our infection has been traced to two sources, Rochester, N. Y., and Dayton, O.

There is probably no known insect that is capable of doing greater damage to our fruit trees than this tiny scale insect. Prof. L. O. Howard, chief of the Department of Entomology at Washington, D. C., says of it: "It is not striking in appearance, and might often remain unrecognized, or, at least, misunderstood, and yet so steadily and relentlessly does it spread over practically all deciduous fruit trees—trunks, limbs, foliage and fruit—that it is only a question of two or three years before the death of the plant attacked is brought about. Its importance from an economic standpoint is vastly increased by the ease with which it is distributed over wide districts through the agency of nursery stocks and the marketing of fruits, and the extreme difficulty of exterminating it where once introduced, presenting as it does in the last regard, difficulties not found with any other scale insect."

Prof. S. A. Forbes makes the following statement: "When to this general report of injuries done by this scale insect elsewhere I add the ominous statement that we have found, within the last twenty-four months, twenty-three widely separated localities in Illinois upon which the San José scale has securely fastened itself and from which it is certain to spread in all directions if not checked or exterminated where it is it will be clearly seen that we have to deal with a first-class emergency in the history of horticulture in this State; one which calls for wisdom in counsel and energy in action as few other things have done since horticulture first began to assume prominence among us as an industrial pursuit." These are the words of men who are thoroughly familiar with the facts and who are expressing their honest convictions.

HISTORY OF THE PEST.

It is called the San José scale for the reason that it was first discovered in the San José Valley, California, in 1870, on the premises of the late James Lick,

the founder of the Lick Observatory. During his lifetime he imported many trees from foreign countries, especially from Chile, in South America, and it was on trees that are supposed to have been sent from that country that the insect was first detected. But the Chilean authorities claim that they first found it on pear trees sent them from the San José Valley. The insect has also been found in Australia and the island of Hawaii; so that the original home is a matter of much uncertainty. It soon spread over the western half of the United States, but did not reach the east until the spring of 1887, when it was sent on plum trees from the San José Valley, California, to Stark Bros., of Louisiana, Mo. They were not suited with the grade of the stock and did not unpack it, and later, at the request of the original shippers, sent the whole consignment to two nursery companies in New Jersey. It is from this lot that the most, if not all, of the eastern half of the United States has been infected, either directly or indirectly. It has now been found in nearly all the Eastern States.

Our first infection came to us probably from Rochester, N. Y., and was purchased by Mr. H. T. Kern in 1891 and planted on the lot now owned by Mr. J. M. Mitchell; at least his property is in the center of the infected district, and several of the infected trees have died apparently from the effect of this insect. It has been found in the adjoining lots in all directions, in some instances being more than two squares away. This scale has also been found on trees that were sold in 1894 by agents representing John Sebenthaler, of Dayton, O. This insect attacks a great variety of trees and shrubs, it having been found on the plum, peach, apple, quince, cherry, osage orange, Japan quince, grape, currant, birch, willow, elm, rose, sumac, linden, catalpa, persimmon, pecan, wahoo, mountain ash, croton aster, several species of poplar, and, finally, Mr. R. W. Braucher found it on Prince's Feather (*Polygonum orientale* L.). It has also been found on other hubaceous plants, including the strawberry. The bark of a tree that is badly infested has, to the naked eye, a scaly roughened appearance, is of a dusky or dark gray color; when rubbed the finger detects a slightly oily or soapy feel, due to the crushed insects. When examined with a magnifying glass the bark is found to be covered with small, nearly circular scales, many of which have a tiny nipple-like projection on the back; this protuberance is surrounded by a small groove. These features are very characteristic and serve to distinguish this species from several others that infest our fruit trees. The species which most nearly resemble it is the Minor or Forbes scale (*Aspidiotus Forbesi*, Johnson); it requires a microscopic examination to make a positive diagnosis. The Putnam's scale (*Aspidiotus ancylus*, Comstock), the obscure scale (*Aspidiotus obscurus*, Comstock) and the Howard's scale (*Aspidiotus Howardi*, Cockrell), all look very similar, but usually lack the protuberance surrounded by a depression so common on the San José scale. The Minor or Forbes scale has the same groove and nipple, but with this scale the nipple and groove are nearly white in the young, while with the San José scale the nipple is light gray with dark gray groove, or dark gray with light gray groove, and the scale outside of the groove is dark gray or nearly black.

A SIMILAR INSECT.

The oyster shell bark louse and the scurfy bark louse are often found on fruit trees, but they are not such a serious pest and can usually be distinguished from the San José by their larger size and oblong shape; also by the fact that when these scales are lifted from their attachment on the bark during the winter they are found to cover a mass of tiny eggs, while in the San José scale they cover or contain minute live insects. This species seldom if ever lays eggs, but brings forth its young alive. When a little more than a month old the female brings forth young, varying in number from one to six hundred, and as many as four generations usually occur in this latitude in one summer, all reproducing at this rate. It has been computed that a single female may become the proud mother, grandmother, great-grandmother, and the great-great-grandmother of more than a billion and a half scales in one season. When we add to this the fact that so far this insect has had no seri-

ous enemy, and that it is almost certain death to the tree on which it fastens itself, we may realize that we are about to face an enemy that calls for our best and united efforts in trying to subdue it.

When it comes to the matter of treatment we find our task is still harder. For a few hours after a young scale has been born it crawls about in an aimless sort of way, then thrusts its long slender beak into the bark and remains there the rest of its life, sucking the vitality out of its host. The outer portion of the beak is divided into four or five filaments, which, after passing through the bark, are insinuated between the bark and wood. The females have no wings, and seldom travel more than a few feet from their place of birth. Males bear wings during the latter part of their life, but their flight is short and has nothing to do with carrying the insect to new localities. So that, unaided by external agencies, the migration of this insect would be very slow. The principal means by which it is conveyed is by nursery stock. This being the case, everything sent from a nursery should be scrupulously examined, both before it is sent and before it is received. If this were carefully done its present rapid spread would soon be checked. It has also been carried long distances on shipped fruits. After it has once been carried into a locality it may be further distributed by the larger insects and birds, on whose feet or wings it may be carried to neighboring trees or orchards and a new colony set up. When the branches interlock they will readily crawl from one to another. It is also claimed that the insect is sometimes carried to neighboring trees by strong winds or currents of water.

When a locality is once badly affected nothing but the most thorough and heroic treatment will succeed. When a tree is well covered by the scales it should be dug up and burned, for even though the treatment be successful the injury already sustained would make the tree practically worthless. While those that are less seriously infested may be saved by a thorough washing, or, better, sprayed, so as to reach every part of the tree from the tips of the limbs to three or four inches below the surface of the ground with a strong solution of whale oil soap—two pounds to a gallon of hot water—applied while hot. In case of nursery stock just received, the trees may be entirely immersed in the solution. The trees should be carefully inspected every few months, and if found necessary the treatment repeated until the pest is entirely exterminated.

THE FARMER'S ORCHARD.

By B. O. Curtis, Paris, Ill. Read before the Edgar County Farmers' Institute.

I will discourse to you on the farmer's orchard, not the commercial orchard. It is more interesting to grow fruit for home use than for shipment to distant cities.

I was raised in the first orchard of grafted fruit trees that was planted in this country. A farm without an orchard would be unnatural and undesirable. The orchard is the most valuable improvement that can be placed on the farm. Its value can not be estimated in dollars and cents. Its life and health giving product is beyond all computation. If you raise fruit you are sure to have it. If you depend on the market for a supply you are sure to be without it half the time.

There is nothing like gathering the ripe fruit fresh from the trees. A patron of mine some time ago said to me that the reason that I lived so long was that I always had plenty of fruit to eat. Very well, if it extends our days we should be the more anxious to obtain it.

If the varieties are carefully selected you may have ripe apples every day in the year. To make an orchard the first thing to be done is to choose the site on which to plant the trees. This should be elevated and dry, close to the family residence, and if possible to incline to the north, as trees thus situated

better withstand the winter changes. Before planting the trees the ground should be double plowed and thoroughly harrowed and rolled until in fine condition.

We have now come to the most important item in the whole routine of orchard growing, the selection of the trees. These should be the best in quality of tree and best in quality of fruit, and you should know when each variety will get ripe. You don't want to plant the budded tree. It is short lived and unreliable in every respect. You don't want to plant the whole root grafted tree; it is scarcely any better than the budded tree. It is the most subject to bark bursting at the collar of all trees.

You should plant the piece root grafted tree; it is the highest type of perfection in the art of propagation. It is a perfect tree. It has no equal. When you build a house you are careful to lay a solid foundation. If you do, it will stand; if you do not, it will not stand. It is the same in making the orchard. If each tree stands on its own roots (from the scion) you have a solid foundation and it will stand for many years. If you do not thus plant, the orchard will be of short duration.

When I planted my first orchard in 1850 I planted ten two-year budded trees of the Pryor's Red, a popular winter apple at that early day. They made a good growth and were damaged by the cold winter of 1855-56 and in less than ten years were all dead. In way of experiment I had planted a row of one-year trees. In this was one piece root grafted tree of Pryor's Red. This is today a living, sound and healthy tree 48 years old. It gave twenty bushels of fruit in 1895 and now it looks as if it would endure the storms of another half century.

Why did the budded trees die so soon and the root graft live so long? It is this: the seedling stocks on which the buds were worked proved too tender to withstand the cold winter and when the stock dies the bud must go also. The piece root grafted tree lives and grows; lives on and on because it formed a mass of roots from the scion and now stands on its own roots a perfect tree. It draws its nourishment from the soil through the fibres of its own roots.

Two years ago I met a farmer on the street and he hailed me and said that he wished to ask me a question. Stated that he got the trees from me to plant his first orchard. That was in 1850, 48 years ago. Said that the trees were nearly all living, growing and bearing good fruit; that they had given perfect satisfaction. Since that time he had planted 600 trees received from various sources and they had died badly from the start and were now about all dead and they had never done any good. "Now," said he, "tell me why your trees have done so well and the others have done no good." I replied that the Curtis trees were grown from scions cut from bearing acclimated trees; that we had selected the hardiest and best varieties known and it was not strange that they should do better than trees shipped in from distant states. If his trees were budded that would account for their short duration.

Select two or three year old trees. November is the best month in which to plant trees of all kinds, though there is not so much difference in fall and spring planting, but that it may be done successfully either season. If set in the fall, after the planting is done throw a few spades of soil around the stem of the tree to hold it to its place through the winter. I have never known a tree thus protected to be gnawed by the rabbits or to be heaved out of the ground by alternate freezing or thawing.

To plant the trees dig the holes two feet wide and a little deeper than the roots require. Dig the bottom of the hole up loose, pulverize it, press it down and fill it up till it will receive the tree two inches deeper than it stood in the nursery. Cover the roots with fine soil. Work it in carefully between the roots until every space is filled. When three inches of soil is placed on them press it down firmly with the feet. As you fill in continue to firm it until the hole is three-fourths full. If it is dry weather pour in a bucket of water and when this dries in fill up the hole with dry soil and do not firm it any more, but leave it loose on the surface.

The orchard should be cultivated in corn or vines of some sort for five years then seed it down to clover. It will by cultivation grow more in one year than in three years of neglect. Pruning the tree is done to guide the growth not to

increase it. The tree should form its head low—the lower the better—say two feet. If pruned up four or five feet high many of them will be damaged by sun scald and they will be two or three years later coming into bearing. June is the best time to prune, though small limbs may be removed at any time without injury. If neglected till large limbs have to be cut away it will be best to do this in February.

The orchard should be protected not only against the intrusion of stock, but by planting a row of evergreens on the south and west to stay the fierce winds from those directions and to shade the orchards as much as possible from the rays of the sun in the winter.

Many years ago I had an experience in protecting a peach tree through the winter. The tree was about six years old and chanced to stand within two feet of my grafting house on the north side. It was the last of November. I drew the branches down to as near a horizontal position as could be to not break them, and with strips of leather and tacks fastened them to the wall. This was the coldest spot on the farm, exposed to the cold wind from the north but screened from the shining sun. It was a very cold winter, the mercury going down to 14 degrees below zero. All the peach blossom buds in my orchard were killed that winter but not a bud damaged on the protected tree. In April it was very full of blossoms and in season matured a heavy crop of fruit. Had the tree been on the other side of the building the buds would have been killed by the sudden changes.

I have frequently seen in the wheat fields in the spring where on level land and that which inclines to the south the wheat would all be winter killed, while on that which inclines to the north it would be in perfect condition.

In 1856 when the mercury fell to 30 degrees below zero and many of the orchards were killed there was a Milam orchard on the north side of the North Arm prairie that every tree was killed, the sun reflecting from the timber on the orchard. There was a Milam orchard on the south side of the prairie and in the shade of a large body of timber and not a tree of this orchard was damaged in the least by that terrible winter.

I give these facts to show that to protect the orchard we must place the protection on the south and west and not on the north. Let the cold winds of autumn come in and cause the trees to mature their growth early and be prepared for winter.

The farmer's orchard should occupy at least two acres of land. Plant the trees 30 feet apart in rows both ways square form. This will take 48 trees to the acre and require 96 in all.

The following is a good selection, the best for this locality: Summer—Yellow Transparent, Red Astrachan, Dutchess, Sops of Wine, Early Pennock and Lowell; autumn—Maiden's Blush, Wolf, River, Fall Wine Sap, Utter, Wealthy and Rambo; winter—Northern Spy, Grimes' Golden, Baldwin, Jonathan, Twenty Ounce Pippin, Milam, Ben Davis, Willow, Rome Beauty, Yellow Pippin, Lawyer, Mammoth Black Twig, Jannette, Talman Sweet.

SMALL FRUITS ON THE FARM.

By J. W. C. Gray, Atwood, Ill. Read before the Piatt County Farmers' Institute.

When I consider the under-supply and in many cases actual destitution of small fruits upon the average farm and the possibilities, pleasure and profit in its culture even under conditions and environments which are peculiar to each individual farm, I am at a loss to know what language to employ to impress upon the minds of farmers the importance of this legitimate branch of farm industry. As a rule we never tire of the flattering encomiums bestowed upon us without stint, relative to our progressive spirit and aptitude in overcoming difficulties which beset the farmer upon every side, and never weary of hearing of the natural advantages which accrue to the average farmer by reason of his occupation, in which he is largely independent of his fellow men and in which he is brought in contact with nature in all her beauty and liberality.

enjoying the blessings of our Creator from first hands. Let us not conclude from failure having followed our first efforts to grow small fruits on the farm that there are secrets deep and dark, ignorance of which precludes the possibility of successful fruit growing, and content ourselves with a mere taste of a second-hand blessing purchased at the town grocery, which serves only to aggravate rather than to satisfy the national craving for fruit in its season, and which is truly a blessing vouchsafed to the people of this highly favored country. It is true that certain agencies have operated to discourage fruit growing on the farm, but experience has shown that the average farmer must grow his own supply of small fruit or treat it as a luxury to be enjoyed only by the favored few. In urging my fellow farmers to plant and care for fruit, I am not unmindful of the difficulties to contend with, and errors which have crept into our philosophy of fruit growing. The deception practiced by unprincipled persons to effect sales of nursery stock at extortionate figures, has not been without its evil results. But the man who will pay an entire stranger three prices for a tree or plant—varieties, the name and merits of which he knows nothing—solely upon the stranger's representation that all the horticultural possibilities are enveloped in the plants which he offers for sale, and that the tree or plant will flourish and even astonish him with its load of luscious fruit, without any further attention upon the planter's part after the roots have been stuck into the ground, invites defeat and is undeserving of that degree of success which is invariably attendant upon the labor of the man who cultivates and whose solicitude is not bartered away. It is far better to buy close at home, when you can get what you want, and of men who have a reputation for square dealing, be they agents or growers. It is not to be assumed, however, that all persons personally unknown to us who are soliciting orders for trees are rascals. Be it said to their credit, that they have done much to keep alive the interest of fruit growing on the farm. But the fact that we have been deceived in the manner indicated suggests the importance of familiarizing ourselves with public opinion of varieties and their adaptability to soil and conditions peculiar to different localities, and the environments of each individual farm. In the matter of detail relative to fruit growing on the farm, much information may be gained by reading, but skill must come by practice. In making a selection of varieties we are bewildered rather than aided by the great multitude of candidates for public favor, and while all varieties possess more or less merit, the degree of which is largely determined by the treatment the plant receives at the hands of the planter, there are comparatively few which possess the inherent quality of accommodating themselves like the Concord grape, to a wide diversity of soil and climate, conditions and environments which obtain over the vast range of territory where fruit is successfully grown.

As the farm is coming to be the place where real merit in tree or plant is determined, I deem it compatible with safe business rules which serve to insure the careful farmer immunity from pecuniary loss and disappointment through the deception of the swindling fraternity, to test from time to time as many of the newer and promising varieties that my space and time will allow, their name and behavior noted, for the farmer and my own convenience in the future. Good plants at the start is a big thing, and then good treatment everything after that. Give the berry patch a good plat of land and then give them proper cultivation, and you will be amply rewarded for your labor.

BLACKBERRIES.

I have made a specialty of raising this fruit, not in large quantities but in varieties; have tried many and have now the following varieties, but of some only a few: The Erie, Wilson, Jr., Wilson, Taylor, Ancient Britain, Early King, Minewiska, Snyder, Lincoln, Kitatinney, Lovett, Lawton, Silver King, Early Harvest, Stone's Hardy, Agawam, etc.

To give a full description of each of these berries would make an article much too long. So I only describe those I recommend for this locality. The Early King for an early berry. This is a good, strong, upright grower. Berries fine at first picking, but tapers down till the last pickings are but of little value, and thorns on stalk and leaf, that bring the pickers into grief. But on

account of its early bearing it will do to plant. 'Tis hardy. The Erie comes next and is a fine, large, round berry, of the best quality, canes strong, healthy and upright and a sure bearer. Wilson Jr. is another fine berry, with a strong, healthy cane and productive and hardy. The Taylor is a fine berry and should be in every collection that is planted on the farm. Berries large and long and is also very hardy, an upright grower but not so rank as some. It sends up a great many sucker sprouts and it has to be cut or thinned out in the row or you will soon have too many canes, and consequently smaller fruit. The Minewiska is a fine, large, sweet, round berry, resembling the Erie. The canes are hardy (here) but have a somewhat trailing habit and some of the canes will have to be staked in order to cultivate close to them, which is very necessary, but for a few it will pay for all the trouble in big, round berries.

THE ANCIENT BRITAIN.

This I got from near Ontario, Canada, and is the latest ripening of all the berries I have ever had. Ripens long after all others are gone. It is a berry of good quality, of fair size and last as long time, a good grower, a healthy cane, fine foliage, iron clad and stands the drouth well. The Early Harvest is too tender here and the berries are too small, the Stones Hardy makes them too soft and mushy to handle. I imagine the reader is wondering why I have not said anything about the Snyder berry. I will tell you. I have weighed them in the balance and they were found wanting. I have no use for them, for I have better. While they stand the winters fairly well, they were hurt more by the drouth than any berry plant I ever had and I want to say to the planter the time is here when we must ask and know whether a tree or plant will stand the dry summers for this is more trying on the vital forces of plants than the frosts of winter and this fact must not be overlooked, so I drop the Snyder. If the planter will get the varieties (true), plant and give the proper cultivation, he will be well compensated for the trouble he bestows.

RASPBERRIES, BLACK CAP.

Of this variety I have tried a great many that was said to be a berry without a fault, but after a fair trial found that they were of no value here. The introducing of new varieties is many times largely overdrawn and calculated to mislead. Of black caps the Nimeka was as good as any I ever had. The Tyler and Gregg are fairly good berries. The Mammoth Cluster is a good berry and will yield good crops if it is properly cared for.

As to the reds I have tried many and believe the Turner, all things considered, is as good as any. The London has been highly praised, as has also the Miller, and are fairly good berries, with strong upright canes that give easy and a nice chance to cultivate, but both of last badly. Like the miserable Cuthburt all of the above are hardy here. As to the ever-bearing varieties, I have tried all of them as they have been offered from time to time and all have been miserable failures except perhaps the Gault Perpetual, which from my experience is largely overdrawn. There is the much lauded Columbian that will disappoint many a planter in regard to fruit. It will go like the Royal Church and the Gladstone, "where the woodbine twineth." I have some very fine berries, both black and red, that I raised from seed, as good as any, specimens of which I sent to the division of pomology and were considered there to be fine. Of these I am planting with good results. I have some seedling blackberries that are fine, one berry early, ripening before the Lucretia dewberry.

GOOSEBERRIES.

This is my favorite fruit. It comes on early for sauce and pies and the medicinal qualities of this berry are little known. I have the following varieties on my grounds but the last two seasons have been so dry that the test of some is hardly a fair one. I have Keepsake, Red Jacket, Lancaster Ladd, Chautauqua, Columbus, Triumph, Pearl, Industry, Crown Bob, White Smith, Smith's Improved, Downing, Houghton and Mountain Seedling. Many of the

English varieties are subject to the mildew, the Industry worse of all for me. The shocking sun of high noon seems to wilt them down and it is necessary to plant somewhere in a sheltered spot, protected from the hot noon sun. Last summer I tried on a small scale, in my garden (the rows being east and west), the planting of early corn 2½ feet from the rows of berries, which grew up and by the time hottest days came was high enough for good shade, with good results. But this was in the garden and all farmed with a hand wheel plow. The varieties that have seemingly done the best for me are the Pearl, Crown Bob, Smith's Improved and White Smith. But a good season may make some change. The Downing and Houghton will still do to plant, and the Mountain Seedling has always done well for me. Berries small but a heavy bearer.

CURRENTS.

As to this berry, there will never be too many. The wines, jams, jellies and other things which can be made of this fruit makes it very valuable, but how neglected. The varieties I have are White Grape, English Cherry, Red Dutch, North Star, Fay's Prolific and the Crandall tree currant, which is of no value here, but any of the former will give good results if given a fair chance.

SOILS.

All small fruits thrive and do better in deep, rich soil, and with thorough cultivation there need be no failure. All small fruits, as well as trees, need more or less pruning to keep down the surplus brush, which will soon dwarf the fruit, and as there is no special rule for this, and knowing the majority of farmers to be men of judgment, they will soon catch on.

BLACK AND RASPBERRIES.

The pruning of these consists mainly in cutting out the old canes, which really ought to be done as soon as the fruit season is over. But if you have a pruning hook you can do the job better when the ground is frozen, for then the plants will not pull out of the ground. They should be in rows seven feet apart and close together in the rows, the canes kept thinned to one stalk in a hill and the new canes cut back to 3½ feet high (done when young). Then you will have cane branching from near the ground, and a straight, upright row of plants that you can cultivate without trouble, and a thorough cultivation keeps the soil in a condition to hold the moisture. The ground in the berry patch should be kept clean, the surface finely pulverized and always worked after a rain as soon as dry enough. The treatment for the raspberry is about the same as for the blackberry.

THE STRAWBERRY.

This humble little berry,
That clusters round our feet.
Like sparkling gems tucked in the grass.
So dainty, nice and sweet.

By the proper cultivation of this sweet, dainty little berry, that comes so early in spring, all could have who own a small plat of land. I suppose I am only writing for the small planter, or the farmer who is only desirous of raising what would be a sufficiency for his own table and it is not likely that many who will hear this read will want to plant broad acres.

WHEN TO PLANT.

By an experienced hand the strawberry can be planted successfully any time in the growing season, but usually the plants are set in the early spring or when the runners have made good plants after the fruit is gathered, and success depends first on good, strong, healthy plants, and without these failure will likely follow. Second, the preparation of the land, which, to say the least, must be good corn or potato land, it can not well be too rich, but if

manured the same must be well rotted and not coarse stuff. Timber land that is properly prepared will be likely to give the best results. But good berries may be raised on black soil. The soil must be stirred deep, and that means not less than 12 inches, so the little rootlets can have mellow, moist soil, which they love. The surface must be thoroughly pulverized by a smoothing harrow, if your patch is of sufficient size to use a team. If not, a one horse harrow will do, and don't stop till the last small clod is smashed; when this is done stake off your rows, north and south if possible; get your wheel garden plow, every planter needs one, put on the small shovel and draw lines three feet apart (the ground must be dry); you can if you try make these marks straight as a line; they must not be deep; then you are ready to plant, and the plants must be set in these marks and great care must be taken in this, for if the plant is set too deep the crown will rot and if too shallow the ground will settle down from the roots, leaving them exposed to the air so they will dry out and perish.

HOW TO PLANT.

Take a bright spade, one that will slip through the dirt nicely, straddle your mark, shove down the spade a good depth, then shove the top of handle forward, and if the planter, with his plants in a bucket of water, is ready, let him take a plant, spread out the rootlets fan shape and drop the roots nicely spread out just behind the spade; when the spade is withdrawn press the dirt firmly down with the foot and the job is done, and by a little practice you can soon learn to do a nice job; plant about 18 inches apart.

AS TO VARIETIES.

I would say to the common planter plant only the varieties that have done well over a wide range of country; don't pay extravagant prices for new and untried varieties—don't do it. I have paid one dollar apiece for the Jessie, the Dew, the Fountain and some others that were of no value whatever on my grounds. I will name a few that will not be likely to deceive the planter by even ordinary care.

The Bubach, an old reliable berry. The Crescent succeeds nearly everywhere and a fine berry. The Red Warfield will never disappoint you. The Haverland, the most productive berry under cultivation, only one fault, stems too short, berries lay on ground. The Greenville, a fine berry, fine foliage without spot or rust. The Timbrel has done well with me, a fine berry, strong grower. All of these varieties need to be fertilized. I name some of the best for this purpose, The Beder Wood, a heavy fruiter, rich in pollen. Michels Early, very early, rich in pollen. The Dayton, fine, large, early berry, rich in pollen. Mt. Vernon, a grand old berry, rich in pollen. The Enhance, very vigorous grower, a late good berry. The Gandy, the latest of all strawberries, big berries, firm and good. Any of the varieties named here will pay the planter well; all have been tried over a wide range of territory and have not been found wanting.

I want to say to the planters that I have some remarkable, fine berries that I raised from seed; one, the strongest and most upright grower I have ever seen, holds its berries up above the foliage, strong big stem, berries large and fine. I have some others that are fine, large berries. Of the first I could spare a few and would let them go, 12 to one man, for 25 cents per dozen, which would about pay for the digging and postage. I have some very fine blackberries that I raised from the seed, only a few to spare, and seedling grapes, fine, early and large bunch; have some good plants, 3 for 25 cents.

There are many more valuable things to be said on this important subject, of which this is only a synopsis, but the paper is already too long. If I have dropped one word or advanced a single idea that will be of any value to the planter, I am paid.

STRAWBERRIES.

By B. C. Warfield, Sandoval, Ill. Read before the Marion County Farmers' Institute.

SOIL AND PREPARATION.

Any soil that will grow 60 bushels of corn per acre will produce good strawberries, but a deep sandy loam is best; never use freshly manured or sod ground. It should be well drained. Plow in the fall, 8 or 10 inches deep, making the land in beds two rods wide. It is desirable to have land free from weed seed. In the spring plow the beds again as soon as the ground will work well. Work the beds down firmly. It is very important that the surface be made smooth as well as firm. Mark off the rows $3\frac{1}{2}$ feet apart, with a good hand marker, 9 rows on each bed. Cross mark the beds two feet apart. Cultivate both ways until the 1st of July, then stop cultivating the narrow way, and form the matted row.

PLANTING.

Use good, strong plants grown from new beds planted for that purpose. Dig up the whole row; in so doing you will have good, strong plants. Trim off all dead leaves, runners and buds, if far enough advanced. Early in spring is the best time to plant. Slant the hole very little, firm the soil around plants; set the crown even with the surface; roots spread fan shaped. Better cut the roots to three inches in length than to have them curled up in the ground. I prefer setting every third row to some good staminate variety. In this way you can keep each kind to itself, which I consider important, if you wish to obtain best prices in the market.

CULTIVATION.

This should begin a few days after planting. With any good tool loosen the ground well between the rows, then with hoes, scrape off all weeds. Be careful not to loosen the plants. Never allow a crust to remain long after a rain. Work often, but never when wet. Shallow cultivation forms a dust mulch; this prevents the moisture from escaping. I use a one-horse drag between the rows with good success. Thin out the runners to not less than 3 or 4 inches apart, and cover the rest with fine dirt, and keep up cultivation between the rows until the last of September.

MULCHING.

This should be done as soon as the nights are cold enough to form ice. Cover with straw or any material free from weed seed or chaff. This should be raked off as soon in the spring as freezing is over, and left between the rows, tramping it down well.

MARKETING.

Have nice, clean packages, well seasoned. Damp or wet boxes are apt to mould the berries. Put none but good, sound berries in the boxes, and each berry having a half-inch stem, and see that the boxes are filled with equally good berries all through to the bottom. Don't allow the pickers to keep the berries out in the sun long after they are picked. Let the small pickers have 4-quart hand crates. Pick every day, and it is better if they can all be gathered by 10 a. m. Patronize only one firm in a town. Keep up your reputation by always sending the consignee a good article. You can't force people to buy your berries, but you may tempt them to buy fine berries in boxes well filled.

FARM DEPARTMENT.

ROTATION OF CROPS.

By Charles W. Johnson, Grand Detour, Ill. Read before the Ogle County Farmers' Institute.

It is a mark of thrift and enterprise for a farmer to have good, well painted and well kept farm buildings, and this condition, coupled with good roads and fences, always delights the eye of a traveler through the farming community and is everywhere regarded as a pretty sure sign of prosperity.

In some parts of Illinois where the farms are large and naturally very fertile the buildings are a secondary consideration and but little anxiety is felt about anything but planting and in due time reaping, without any particular regard as to the kind of crop planted or the necessity of changing from corn to something else, or vice versa. This kind of farming worked quite well in Ogle county 30 years ago, and will do now on the recently drained swamp lands, but taking our lands as we find much the larger part of them in this county, with the clay subsoil only a few inches below the surface, and getting nearer the top year after year, by the washing and wasting of the soil, makes it imperative that something be done to recuperate or restore this loss. But perhaps someone is ready to say, can careful farming and close attention to keeping up the land be made to pay a return for the money and labor expended. I will try to give a few reasons why I believe the kind of farming I am going to recommend will pay. We all remember a few years ago the farmers were generally agreed that it was almost useless to try raise cattle here in competition with the vast herds produced on the western ranges; this idea, I believe you will agree with me, is fallacious, when we consider the prices prevailing for cattle the last two years. Next it was about useless to try to raise horses, as the western fellows could easily beat us at that too. But even horses are meeting with demand and better prices in spite of bicycles, electric railroads and western ranges combined.

Now, the next thing I will try to notice is our rapidly increasing population and, in fact, of the entire world. without any great wars for almost a generation, and a prospect that the Gatling gun and the other destructive appliances of war will command peace forever. It seems to me conclusive that the demand for breadstuffs will increase year by year without a corresponding increase in the production. Already the question is beginning to be asked, how is the world to be fed a few years hence.

I know you will smile at this idea when you consider the present price of corn and oats. But think of wheat too, of potatoes, eggs and beef, and then of the starving millions of India and Cuba. On the other hand, where we may gain some new farms in the west, it will, I believe, more than offset the depleted, worn out and in many cases deserted farms of New England and the other eastern states.

Did it ever occur to you that farms now worth about \$10 per acre, and in some cases abandoned, and their once well-built and commodious buildings left to rot, were once valuable and the land considered productive?

I have often asked myself the question, whether the time would ever come that land would so depreciate in value here? Thirty-five years ago farms that can now be bought for from \$10 to \$20 per acre in Pennsylvania and New York would bring from \$40 to \$100. I believe this point can be reached or it can be averted. In 1874 I bought a fractional quarter section of land for about \$19 per acre, and it was the first land I ever owned and I went in debt for that. The man who lived on it said he could farm some spots on it, as nothing would grow on the balance of it. I did not move on the place for four years but farmed another place that I rented. As soon as possible I sowed the place, one part after another, to rye in the fall, and then to mammoth clover in the spring, and by the time I moved in 1878, had about all the gutters filled and seeded down and was ready to begin plowing up the sod for corn; this I did and got a splendid crop; followed the corn with oats, then

wheat or rye, and again to mammoth clover. This course I followed from 1878 to 1890, bought more land, about one-half of it the same kind of old worn out farms and the rest timber, about 125 acres of which I cleared, generally putting wheat first on the new land, but sometimes corn, kept adding in this way until I got 454 acres, paid for it all and put on what I consider very fair farm buildings, the whole costing about \$17,000. Sometimes where we plowed under a crop of clover, seed and all, we raised a crop of corn, followed by a crop of oats, shoveled in the corn stalks, plowed the stubble in the fall and drilled in a crop of winter wheat, and found that the land was nicely seeded to clover without sowing. Have always pursued about this rotation of crops, and, with the exception of two or three years, of which 1887 and 1896 disarranged my plans the worst, have met with very satisfactory results; have raised from 22 to 36 bushels of wheat per acre, generally about an average of 25 bushels, on what was generally regarded as worn out land twenty-five years ago.

I believe the problem for the Ogle county farmer to solve today is how to make every acre produce the very most and best quality of whatever is sown or planted on it. Of course good seed and good cultivation are requisite conditions, but first of all you must have the good ground. It takes experience to know the crop that is likely to do the best on a certain piece of ground and even the best farmers will miss it sometimes.

Now it is no use to waste seed trying to raise a good crop of winter wheat on a poor, impoverished piece of ground. If it is very poor and you haven't manure enough to bring it up, and don't believe clover will do, better fallow it one year. I have left a piece of corn stalk ground grow up in weeds until July, then plowed them under, manuring the poorer spots in the field and got an average of 28 bushels of wheat on 35 acres which was once the very poorest field I had. I might add that I sold this wheat for \$1.08 per bushel in the spring of 1890. This I consider better than raising two crops averaging 12 or 13 bushels per acre on the same ground, in the same time. It is quite possible that any system of crop rotation that may be regarded as about right now, will not do a few years hence. When clover, or trefoil, as some of the French writers call it, was first introduced in Europe as a fertilizer, it was thought that perfection in agriculture had been reached, but after a while even this did not do so well, and such has been the experience of farmers with whom I am acquainted in the State of Maryland and other localities in the east. Then they resorted to commercial fertilizers, many believing that the results could only be measured by the amount of fertilizer used, and in many cases this seemed to be borne out by the immense crops produced, especially of wheat. One man I remember buying an old farm that could be scarcely made to produce 15 bushels per acre, and by using \$2.50 worth of phosphates a yield of 49 bushels of wheat was realized. But this state of affairs did not last, the fertilizers were adulterated or the land demanded something else, and I am creditably informed that many have discontinued their use.

What questions may yet confront the farmers of northern Illinois, it is hard to define. Possibly generations yet unborn may have to find some means of utilizing the millions of dollars lost by the sewerage of our great cities, left only to find its way into the rivers and lakes to contaminate their waters without bringing good to humanity in any way. But, leaving all speculations to those who have the time and inclination, it is the present and near future with which we have to deal. I have tried to give you from my somewhat varied experience as a farmer, the plan that works well for me.

In addition to what I have said about crop rotation, I will say further that I always endeavored to keep all the cattle and hogs on the place that I could keep well; used all the corn I could raise to feed on the farm and often bought some besides; worked all my straw into manure and fed all the hay I could raise on the place, and applied every shovel of manure I could get, and kept the ravines seeded to grass as much as possible so as to prevent waste by washing. And now, in conclusion, it does not matter materially to you and I whether the plant we are growing draws its substance mostly from the air or from the earth, or whether the excretions from the roots of the plant now growing will assist the one that follows or from some other cause, the rotation

works well. If we know we have a good thing let us take care to keep it going, and in the meantime attend the Farmers' Institutes, hear our scientific men apply their wisdom as far as practicable, and when our neighbor tells us of something better than we have, try to appropriate it to our own use and benefit.

UNPROFITABLE FARMING.

By J. H. Alexander, Lockport, Ill. Read before the Will County Farmers' Institute.

Many reasons exist, among which I will enumerate—poor management, wet and undrained lands; lack of manure and rotation, imperfect cultivation and poor crops, fast horses and their accompanying evils, lack of order and system in doing work, poor seed and varieties not adapted to soil, city ways, neglect of implements and live stock, waste of time, lack of application and close attention to detail, failure to engage in branches of farming to which farm and proprietor are best adapted, neglect of church and social duties, and dissatisfaction with one's lot.

These are the chief reasons, any one of which will tend to create the undesired condition, as we are forced to infer from our observation of those whose unfortunate experience is our authority for these statements. "Experience," Bacon tells us, "is the great test of human wisdom and is continually overthrowing the theories of men." Let us take these reasons singly and briefly note their workings from cause to effect.

Poor management is so wide in its scope, general and flexible in its application, that it is capable of being made to cover the whole case in one brief expression and were it not that the intention of this feature of the institute is to adduce the reasons that make "farming unprofitable," we could leave the subject here feeling like the Macedonian hero, that we have solved the problem, as he severed the Gordian knot, at a single blow.

Wet and undrained lands are cold and unresponsive to the most urgent appeals, and he who fails to conserve and return to the farm all the manure that can be made, intimately blended with desirable rotation of crops, will, in due course of time, receive nature's infallible notice that his account is being overdrawn and his draft can no longer be honored.

Poor crops, which are usually the result of imperfect preparation and cultivation, bring only small returns and leave the proprietor high on the shoals of financial need, and cause him, in addition to the inconvenience occasioned by lack of funds, a mortification, which must be even more galling to endure, when he compares his returns with those of his more successful neighbors.

Fast horses and their accompanying evils lessen a farmer's love for practical farming, impair the respect in which he should desire to be held and tend to diminish his own self respect; with those essentials gone from any life and blotted from any record, life has needlessly cast its grandest, greatest crown away.

Lack of order and system in doing work occasion much loss of valuable time, frequently accompanied by loss of patience.

Poor seed and varieties not adapted to soil are causes of much loss, and continued cropping of lands to grain deteriorate the quality of both and extend a cordial invitation (which is never declined) for the introduction of weeds, which are a farmer's worst enemy.

City ways and endeavoring to ape city custom are sadly detrimental to a farmer's best interests and by their constant sapping neutralize his profits by diverting much of his income from a better application and frequently make him and his family dissatisfied with their lot.

Neglect of implements tends, by its increased cost of new and its greater increased loss of using, neglected ones to effect this undesired end. It would seem almost unnecessary to mention neglect of live stock among the causes of failure in an occupation in which they are such important factors, and

aside from any financial consideration the heart of man should recoil from neglect of the dumb brutes dependent on him. "Be then diligent to know the state of thy flocks and look well to thy herds" is an injunction given three thousand years ago, and he who fails to heed these words of inspiration that have accelerated the success of every thorough farmer, and which are approved by our sympathy and every sentiment of humanity, will suffer pecuniary loss as the penalty for his crime and drink deeply of the dregs of disappointment for his neglect.

Waste of time is waste of money and the waste of either is highly reprehensible. Produce a farmer who wastes his time and you produce one who is a calamity howler and sound money hater, deceiving himself and endeavoring to hoodwink the public by weaving a monster mantle of charity to cover his own laziness and attributes his ill-success to pure gold!

Lack of application and close attention to detail are important factors entering into unprofitable farming. There were periods when prices were ruling high, that he who was negligent might have prospered, but those times, in the opinion of the author of this essay, have gone never to return, and in these days of small margins in very production of the soil he can not succeed who fails with mind, eye, heart and hand to come in close touch with every detail of the farm.

Failure to engage in branches of farming to which farm and proprietor are best adapted, failure to heed the words of Pope to "know well thyself," have proved frequent reasons for failing to obtain results which were possible had land, location and proprietor held conference, so to speak, previous to embarking on a line of operations in which each possessed its individual features, advantages and disadvantages, none of which can successfully be ignored.

Neglect of church and social duties, the writer feels, are potent adjuncts in making "farming unprofitable. It is an old maxim that all work and no play makes Jack a dull boy and it is equally true that a seclusion from our fellow tends to cripple a man's power for doing well and narrows the horizon of his mind; and this being true how apparent it must be to any thinking person that a neglect of religious observances must callous man to the finer sensibilities of his nature and close the windows of his soul. Milton tells us "God will deign to visit oft the dwellings of just men," and reasoning from this antithesis we may properly infer that any disregard of social and spiritual duties will bring the penalty.

Dissatisfaction with one's lot is one of the most common causes of "unprofitable farming" and many thousands of people who were reared amid the comforts and in the freedom of the farm surrounded by its pure and lofty environments, have discovered when too late that the mistake of their lives was in permitting the seeds of discontent to grow in their hearts and by displacing their love for rural life cause them to abandon "the most healthful, most useful and most noble employment of man."

WASTE ON THE FARM.

By Charles A. Rover, Jacksonville, Ill. Read before the Morgan County Farmers' Institute.

Some time ago I was very forcibly impressed by reading a magazine article upon "What is done with the world's waste." We are all familiar with the fact that the great slaughter houses of Chicago utilize every particle of the ox in some profitable way. In Paris, it is said, that the dust swept from the streets is passed over a powerful magnet, that the minute particles of iron, rasped from the shoes of horses and from the tires of vehicles, may be saved and put to some use. Other examples of saving waste material are just as wonderful: in fact, in many processes of manufacture in utilizing waste lies all the profit. The thought at once occurs to us: is the farmer up with the times in saving and preventing waste. Many, perhaps, are, but we need not look very far about us to be convinced that many more are not.

Ladies and gentlemen, the saving of waste is perhaps a small subject, but the farmer of today is compelled by necessity to use every means of profit in his reach, however small it may be.

Let us begin with the subject of time. I do not accuse the farmer directly of wasting time. Farmers are a hard working class of men. There is always something to do on the farm and the farmer is most generally found doing something. The way the farmer wastes time is in often trying to do too much. I doubt not that there are men in this hall today who have been disabled for a week or month by trying to do too much in a day or week. Again we often waste time by not stopping to plan and think sufficiently before beginning an undertaking. It is said that people most often get lost in going across lots. When the farmer gets in a hurry and tries to take short cuts and to do two or three things at once, he generally has to do them the second time, and time is wasted. Furthermore, I wish to say that the farmer who leaves his farm and spends five or six days of the week in town wastes his time, and a great amount of it.

Ride along the country roads and observe the overgrown hedges, zigzag rail fences, broad fence rows and turn rows growing with weeds higher than your head, and you will soon be convinced that some farmers waste the space that God has given them to till for pleasure and profit. Did you ever think that by closely trimming the hedge or by replacing the worm fence with a straight one, and by planting closely and cultivating carefully two or three rows of corn may be added to the four sides of the field? On a 40-acre field eight rows an acre, 50 bushels even at 20 cents a bushel, \$10; something that ought not to be wasted. Especially is this important to men who rent. You pay a certain amount for an 80-acre or 100-acre farm; why not use every available foot of it? What you save is yours—clear. It is as money found in the street. Space is also wasted by planting more than is needed of garden and other crops, not intended to sell. Space is wasted by cultivating too little. Do not think that planting an extra amount will make up for lack of culture. Plant only that amount that with the best culture will supply your needs in order that as much of the farm as possible may be devoted to the salable crops. Whenever weeds grow space is wasted, as is also fertility, which is an important part of this subject.

Notwithstanding the fact that in the older parts of the country farms are being abandoned because the fertility of the soil is exhausted, farmers will still continue to feed stock where the manure will leach away, and to plow steep hillsides where the soil will wash away just as if fertility was exhaustless and soil of unmeasured depth. Such methods enrich the bottom of the Gulf of Mexico, but do not enrich the Morgan county farmer. Again four-fifths of the boundless atmosphere around and above us is composed of nitrogen, the most important element of fertility. It is available to our use by the application of proper methods. Is not failure to adopt these methods waste?

The waste on the farm, that is most apparent to every one, is that of produce. Hay improperly stacked, corn carelessly cribbed, feed thrown upon the ground and trampled into the mud are not uncommon sights. Last summer I saw a 20-acre field containing as many as 15 or more stacks of hay, averaging not more than two tons per stack. Had the weather not been extremely dry one-third at least of that hay would have spoiled. Had the same amount been put in one or two large bulks upon rail bottoms and properly covered none would have been wasted. How often do we see animals standing around unfenced stacks eating one mouthful and trampling two under their feet. Of all waste on the farm, waste of this nature is most to be deplored. After the farmer has gone to the expense and labor of raising a crop, it is a pity that any part of it should be wasted. How many people expend the nine-tenths or nine-twentieth of the labor required to obtain an object and then fail because they do not spend the last fraction. As I insinuated at the outset, the saving of waste is often a matter of small details, and generally require close observation. Sometimes it is only the difference of one inch in the spacing of the slats of a hayrack whether the stock eat or waste the feed. The little wastes and leaks are the more dangerous because we are apt not to notice them. Produce is continually wasted on the farms in great quantities. Thousands of tons of excellent feed is annually wasted that could be utilized if corn fodder

was shredded and other products better prepared for animal food. But this waste may as yet be unavoidable. We must remember that the cost must in all cases be reckoned. We must not spend two dollars to save one. The better we prepare material for feeding the less, of course, is the waste. But I do not advocate the use of shredders, feed grinders and cookers and other expensive appliances unless the farmer is fully convinced that they will save waste and will pay. I am urging mainly today to save that waste which can be turned to clear gain.

I urge the farmer not to allow his machinery to lay out in the weather and rust; to set his corn pens and bins up from the ground, where pigs and chickens can glean the waste and so that the cats can have a free chance at the rats; to see to it that the feed goes down the throat of the animal and not under its feet; to try to keep his stock warm with shelter rather than corn; to guard his pocketbook; not to buy anything unless he needs it and is ready to buy and is sure he is getting the best—by this he will generally avoid traveling agents; to make the farm his office, his place of business, and spend most of his time there; in fine, to stop all leaks and save all waste.

My friends, I know that I have said nothing in this rambling talk that is at all new to you; but I am convinced that people do not do as well as they know. Morgan county took third prize for the best county exhibit at the State Fair last season. But I feel sure that if her farmers during the coming season will do as well as they know, Morgan county will be able to rank first, not only among the counties of Illinois, but perhaps of the whole United States.

THE AMERICAN FARMER.

By Charles Francis, New Lenox, Ill. Read before the Will County Farmers' Institute.

After graphically describing the development of the United States with particular reference to the American farmer, Mr. Francis proceeds to call attention to the American Farmer and the effects of his influence for good upon the institutions of the land. Among other things, he says:

We will concede to the city great men—men of mind, character and wealth; men who are an ornament to the world and to society, battling for the right and humanity. But what of the rank and file? Are they so noble and generous? What of the average politician and office seeker to be found in the large cities? Is he a prodigy of goodness? does he work for the uplifting of mankind, or for his own personal ends, or for some corporations for dollars? We do not presume to say that all the intelligence and morality are found on the farm, for there are black sheep in every flock. In the quiet country life there is time for meditation and thought along the lines of good government, time for wholesome reading, and then every man that owns a farm or a home feels that he is a part of the government and has an interest in maintaining and framing good laws.

It has been by observation that all wholesome reforms, and a check to extravagant legislation, has been brought about by the law makers from the rural districts. Why should we not look well to our own interests, when we consider that we pay two-thirds of the taxes and produce 75 per cent of all that is produced in the United States, and we should feel proud that we belong to this great army of industry and wealth.

But what of the future? Will we, as a nation and as farmers, advance in the next century as rapidly as the one that is nearing its close.

To my mind we are just entering the promised land to a higher and nobler civilization. When we think of the multiplied industries in this comparatively new world, in their undeveloped condition, we say there is room for advancement.

This advancement will come sooner when the farmer wakes up to his high calling and put his shoulder to the wheel in promoting all wise legislation in the interests of the farmer, such as opening a wider market for our surplus produce, both in provisions and manufactured articles.

Stimulate the growing at home of such merchandise as we are yearly importing by the hundreds of millions of dollars. This will give employment to home labor and will keep our gold at home.

Discourage as far as we may all alien landlords; let our fair domain be owned and occupied by our own citizens. Discourage large capital held abroad from buying up our various industries, for sooner or later it will work to our injury.

Educate public sentiment that America is good enough for Americans, and that our daughters need not go abroad to get married, for there are plenty of eligible young men at home. Encourage the building of hard roads, for there is nothing that shortens distance and annihilates space, so much of a muddy time, like a good hard road; and the farmer feels at ease to think that he is not cut off from the village, the city, or his neighbor: in fact, when we have a hard road we are out of the mud and farm life has lost that feeling of isolation, to say nothing of the discomforts of plodding through the mud.

If it is practical, encourage free mail delivery on the farm. I think the day is not far distant when thickly populated rural districts will be served with a daily mail and good roads will be one of the agencies to bring this about.

Why not go a step farther and have a complete telephone system over our country, where every farmer will be in communication with his neighbor; and this could be extended to the cities, so that the farmer would be in direct communication with the business and commercial world.

In fact, encourage everything that will tend to our health, happiness, prosperity and long life.

To the young man or woman, starting out in life, on choosing wisely depends his or her future happiness and success.

Some may think the farm slow to fame and wealth, and choose a profession which will take years of toil and not a little capital, to accomplish; and after all his time, money and work, he may not be adapted to the profession which he has chosen. Admitting he may be a success, professional men are often cut off, in their early manhood, before they have had an opportunity to distinguish themselves or lay by for the wife and little ones.

When the professional man dies his capital and profession die with him; now if this same energy had been spent on the farm, more than likely there would have been something laid by or at least, when the farmer dies, the farm is left behind for the next generation.

When we scan the mercantile world we see shipwreck and failures on every hand. I have never in my experience known a man to engage in farming and stock raising, who used reasonable judgment, who was not afraid to work, but could make a living and some to lay by for a rainy day.

The home life on the farm.

There are two words that always sound dear to every one. Home and mother, and some of the older people present, when they go back in their memory and think of the old home, perchance the old log cabin, with puncheon floor, with wide fireplace, with logs heaped high, throwing out their cheerful warmth and glow, where father and mother are relating the incidents of early youth and by gone days, or reading some beautiful story or playing games, spending their lives for the welfare and happiness of their children. The homes may be humble or they may be palaces; at any rate they will be what we make them.

There should be sunshine within where father, mother and children love to dwell. The home on the farm is removed from many of the temptations that are found in the city. Our boys and girls grow up in a purer atmosphere; they develop mentally, morally and physically stronger when educated aright to carry on the great work of progress and science.

It is on the farm that many of our so-called distinguished men and women have been reared in their early youth. For instance, Washington, Lincoln, Grant, Garfield, Senator Cullom, P. A. Armour, Samuel Allerton, Potter Palmer, H. N. Higinbotham, Mrs. Harriet Beecher Stowe and Miss Frances Willard, and many more might be added to this list.

Hunt up the biography of quite a number of the distinguished citizens of Joliet and you will find that their early years were spent on the farm, and this is conclusive evidence that the farm is the best place to rear great men and women.

The pride and safeguard of our nation lies in our great public school system, and every farmer and every citizen should look well to its maintenance and development.

There have been wonderful strides in advancement along the line of education in the last thirty years, and if our farmer boys and girls would keep abreast of the times, they must avail themselves of these precious opportunities. The educated boy or girl stands a far better chance in the battle of life than his fellows who have neglected their education. For an educated mind is a store house of wealth.

What a creature of privilege the boy or girl of the next century must be, the heirs of all the ages in the foremost files of time. It is the law of life that privilege brings responsibilities. You must improve or degenerate. you can not stand still; you must trim your sails to the favoring breeze or you will find your bark high and dry on the mud flats of moral failure. The standard of greatness is higher today than in the past. You will be tested by the electric light, not the tallow candle. Upward and onward if you keep abreast with the times.

In conclusion, I would suggest, take good care of the farm, for in it there is a mine of wealth; we need not go to the Yukon or Klondike to find gold, for there is gold hidden away on every farm, and it only awaits the farmer's hand to unlock the hidden treasure. The farm is the farmer's kingdom.

From the center all around to the outermost fence or boundary the farmer is the supreme ruler. His prerogatives are royal. He says to one, "Come," and he cometh. To another, "Go," and he goeth. He decrees his own policy, shapes his own destiny, acknowledges no human superior. His word is law. He can make his kingdom a thing of beauty and a joy forever, and extort from beholders exclamations of admiration or expressions of a diametrically opposite character, and there are none to say "No."

He may point with commendable pride to his fields where bounteous crops are maturing, to his herds of cattle, sheep and swine, to his horses and his oxen, and as his bosom swells with the thought that "the farmer feedeth all," may thank his stars that he is, by virtue of his employment, one of nature's noblemen and a member of the world's royal family.

HUMUS.

By William Dyke, Effingham, Ill. Read before the Richland County Farmers' Institute..

Humus is the organic matter in the soil, and is formed by the decay of animal and vegetable matter. The decay of roots, plowing under of sod, stubble, and the application of stable manure all contribute humus to the soil. When we consider that in every ton of well saved stable manure there is only twenty-eight pounds of actual fertilizer, in the form of nitrogen, phosphoric acid and potash, and 1,972 pounds of straw and moisture, we can readily see that the real value of manure is in the humus thereof.

Humus absorbs water much more extensively than any other component part of our soils, and retains this moisture until needed by the growing plant. It improves the mechanical condition of our heavy clay soils by making them lighter, more porous and less sticky.

A soil rich in humus, by reason of its moist condition, has the power to retain the nitrogen obtained from the atmosphere in cultivating the soil, and in growing leguminous crops which store up this nitrogen in their roots, and to render it available for the use of growing crops hereafter. (A soil may be fairly well supplied with nitrogen, phosphoric acid and potash, and yet not be productive, because these fertilizing elements are not in an available form.)

A soil devoid of humus, or largely so, easily bakes after a rain, and a baked or crusted soil throws off moisture into the atmosphere at a tremendous rate during our hot summer days, to the great detriment of the growing crops, hence to restore the original humus to Southern Illinois farms is to employ the very best means at hand to overcome the disastrous effects of our usual summer drouths.

Years ago when our lands were being first brought under the plow, crops of 60 bushels of oats, 30 of wheat, and 50 of corn, were common every day crops, but these new lands were full of accumulated humus of ages; constant cultivation, exposure to the scorching sun of summer, the freezing and thawing, and the washing of winter storms have carried away this accumulation until our cultivated fields have lost ability to withstand the drouth, or to retain moisture sufficient to grow the crops that in past years were common to these same fields, and what was a few years ago a comfortable farm home is now but a wreck, in some respects similar to the human wreck we find so common in the cities, made so by a constant drain upon its natural resources until only the spark of life and the hull remains, and yet both the wrecked human and the wrecked farm are capable of being changed for the better, and being brought into a prosperous condition wonderfully fast if given proper care, food, and cover for its nakedness, the last of which is not properly supplied, with rags on the human or rag weeds on the land.

The thinking farmer is attending Institutes everywhere over the grand State of Illinois, as well as in adjoining states, earnestly seeking for information to enable him to better his own condition and that of his neighbors, and these are the men who must take up this question of restoring the humus to our worn soils; they are the advance guard in everything progressive and must set the example for their slower and less enterprising neighbors.

There are various methods which may be employed to advantage in restoring humus to our worn soils, and at this point I wish to quote from the report of the Minnesota Exp. Station, which recently demonstrated that "when wheat was grown continuously upon the same soil, there was an annual loss of 171 pounds of nitrogen per acre, about 25 pounds being removed by the crop, and 146 pounds were lost from the soil by the wearing away of the humus, and when wheat was grown in a rotation after clover, there was a yield of five bushels more per acre than when wheat was grown continuously. The annual loss of humus when wheat, corn, oats or barley was grown continuously ranged from 1,500 to 1,806 pounds per acre, and worst of all, when summer fallowing was practiced the succeeding crop was increased, but at the expense of rendering five times more nitrogen available than was required by the crop; thus five times as much fertility was wasted by summer fallowing as was required in growing the following crop.

A prairie soil before it is brought under cultivation is said to contain about 1,500 pounds of phosphoric acid and about 800 pounds of potash per acre, combined with the humus of the soil; after twenty years of cultivation, if the humus is not kept up, there will be only about 400 pounds of phosphoric acid, combined with what little humus remains, a loss in phosphoric acid alone of 1,100 pounds per acre from the surface soil."

Doubtless many of you have observed the myriads of animal and insect life which exist in a pile of rotted, moist stable manure. If our surface soils were as full of animals and insects, dead and alive, as was that manure pile the future crops grown would be enormous, and the nearer we bring our surface soils to the condition of that manure pile the better off we will become financially. On poor "worn out" lands but few worms are found, and in proportion as we increase the supply of humus so do we add animal life, and wormy lands are always fertile.

Perhaps there is no method more economical or more available to the farmer of the present in restoring humus than by the use of leguminous crops—clover, cow-peas, and particularly the soja bean, turning under the crop when fully matured. Where the land has been so reduced that it does not produce over 20 bushels of corn per acre, it is hardly possible to secure a profitable stand of clover, and on such lands it is a waste of seed to try to do so; but cow-peas

and soja beans will grow there, and after a few crops of these have been incorporated with the surface soil, the land will be rich enough to feed the young clover plant through the summer months, and loose enough to give ample surface drainage in winter, thus preventing heaving out, so common with us on soils deficient in humus. Another advantage in planting cow-peas and soja beans is the fact that they mature a crop in four months, while clover takes fourteen. We should sow as much fall rye as possible as a cover to our naked soils in winter, as well as to furnish humus; it may be plowed down with profit in spring if done early. A growing rye crop is also one of the best preventatives of washing in winter months, and largely prevents loss of nitrogen by leaching.

The soja bean is, I believe, the most valuable crop ever grown by farmers of Southern Illinois, both as regards the renovating qualities and its feeding value. I have grown it for more than five years, and I find it the best crop with which to build up a worn soil; the best horse feed when cut in the bloom for hay, but do not feed too much of the leaves (the stems are good enough for horses), and I can not conceive of a more perfect food for milch cows than the shattered leaves of the soja bean, with chopped sugar beets and just a little bran sprinkled over them.

Soja bean roots will furnish the nitrogen and bring up from below quantities of other necessary fertilizing ingredients; rye and cow-peas plowed down will furnish the humus, and there is no reason why Southern Illinois farms should not be rapidly restored to their original condition of fertility if the farmer will only avail himself of these crops in doing so.

To the orchardist the soja bean and the cow-pea especially commend themselves, since cultivation can be carried on until July, and a crop of soja bean or cow-pea hay afterwards secured. I once secured a good crop of seed from land that the same season gave me a crop of strawberries, and it is always July before we are through picking strawberries at our home.

Fourteen years ago I moved to Effingham county, to a farm that I afterwards learned had part of it been in wheat for forty-four consecutive years, the last crop yielding less than six bushels per acre, and this was second bottom land which has since yielded abundant crops of berries, clover and corn. The subsoil plow, leguminous plants, together with the humus obtained in plowing under strawberry plants and mulching, after fruiting, have almost restored this land to its original fertile condition, and this result can be obtained with cow-peas, soja beans and hogs, on equally exhausted lands more remote from railway stations anywhere in Southern Illinois.

In conclusion, let me urge the members of this County Farmers' Institute, that you give serious consideration to this question of restoring the humus to our own soils, and to use largely the leguminous family of plants in so doing.

CORN CULTURE.

By E. S. Fursman, El Paso, Ill. Read before the Ogle County Farmers' Institute.

My friends, as some of you know, I am a farmer. I live down in Woodford county on a farm. I have lived on the same farm for 32 years, and I intend to stay on that farm the rest of my life. There are only two men that can get me off that farm and they are the sheriff and the undertaker. And I tell you the sheriff don't stand a bit of a chance, but I don't know about the other fellow. I am going to stay on my farm for this reason: I have looked around a great deal and I don't know of any place in this world where I can be as independent as I can down on that farm. I have no other business except farming and going to Institutes.

But I came up here to talk "corn" to you and I am going to talk on this subject for this reason, that I have learned it by practical experience and observation. If there is one thing above all others that I am thankful for it is

this—that my lot in this world was cast among common everyday, hard working, producing class of men that are called farmers. Men who out of this soil, out of this earth, out of God's earth with these big hands and brain and muscle, produces that which feeds and gives life to the millions of our fellow men. To me it is a grand thought that with these hands of mine in all these years I have been a producer and have helped to feed the world.

This world is divided into three classes: the agricultural, mechanical and commercial. Now, the agricultural world, the one we belong to, is the one which produces. The mechanical takes these productions and enhances their value by manufacturing them ready for the commercial world. The commercial world is a world of trade and traffic. Now, they work hard, they labor, and in a measure, of course, we can't get along without them. They advance our interests. But there is a vast difference, and that is, the commercial world, while they labor, they do not have the satisfaction we have. They labor, they work hard, they advance the interests of the agricultural and mechanical, but they never add a dollar to the wealth of the world. They are the consumers according to the way I see it. There is a great host of idlers, a great army of drones in this great bee hive of the world. But in this class of producers that you and I belong to there can be no such. There can be no drones, all must be busy, active, rushing, doing beings.

Ella Wheeler Wilcox, one of the best writers we have, says: "The world is divided into two classes, the lifters and the leaners. One half just heap their load on the other half of the world." I am past 60 years old, but I believe I have belonged all my life to the lifters, and I am not sorry for it. I should hate awfully to be a leaner and go through this world and know that some in the producing classes was carrying my burden for me. I would be a lifter every time and not a leaner.

Now, I will not say a word on politics, for that would not do here, but I want this: We farmers are independent voters of this country; we are the men that can leave our farms, drive to town, go to the polls, cast our ballot and when we get through we can go out and tell the people exactly how we voted without caring a particle for the displeasure of any set of men, and I believe that if this question of labor and capital that is agitating all classes is ever straightened out and the class legislation that is going on at Springfield and Washington, where a few are benefited at the expense of the whole, I believe if these things are ever settled, it will be through the farmer.

We are not only the independent voters, but farmers are the independent men of the country. I do not know as it is just the thing for me to stand up here and say that I am independent of all the rest of the world, but our business is not dependent upon another man's business, although it is a fact that we are more or less dependent upon others. But, Mr. President, just point out to me a man who owns a quarter section of land. Of course there are numbers of them. That man has a clear deed to that 160 acres of land; he has it well stocked, some good houses and barns. He has corn in the crib, some oats in the bin. That man has a wife and one or two fat babies. Girl babies are the best; and he has \$75 in his pocket, and I want to tell you that man comes just as near being independent as any man in the world. I do not care for your bankers in the city; I do not care for your millionaires; I don't care for any man. I say a man living right here in this beautiful country, fixed as I say, comes as near being independent as any one. You don't have to cater to anybody. Once in awhile we get a raking down from our wives that we don't exactly like, but then we don't get half we deserve.

But do you see that corn down there? I nearly forgot to talk on "corn" and was going on with this subject. But I will start now, and if I get on to some other subject you call me to order, Mr. President. Just say "corn" and I will get right back.

Now, with these big hands of mine, right down here in Illinois, I have raised 43 crops of corn. Forty-three times have I plowed the ground and planted and tended and husked the corn, and 42 times have I sold it and got the money and spent it. There is a difference in the way we raise corn now and the way we raised it 42 years ago, when I commenced. Do you know what sloughs and ponds were 43 years ago? In a wet season our whole coun-

try was sloughs and ponds. It was all right in a dry season, but during the wet season it was different. I know a little story that just illustrates the first farming I ever did, and I am going to tell it. A farmer hired an Irishman to plow for him, and one morning he took him out into the field to get him started, and he said: "Pat, I want you to make good, straight rows. If there is anything I like it is good straight rows, so when you are through the land is not all cut to pieces." "Faith," Pat said, "I can't make a straight row." "Well," the farmer said, "do you see that fence over there? Now, go right for that fence and make it straight." But Pat said he didn't think he could. "Do you see that black cow over there by the fence? You go straight for the cow and you will be all right." In about an hour the farmer came back to see how he was getting along and there he was plowing all over the field. "What are you doing?" he said. "Well, sir, you told me to follow the cow and I've been doing it." And that illustrates how I began to farm. After we had plowed the ground and came to planting we went into the woods and got a log, split it in two and went with that over the ground until it was nice and mellow. Then to mark it we took a one-horse plow, and if we wanted to check it we went both ways. Then we got our wife and children out to drop the corn. My wife says that the meanest thing a man can do is to scold his wife for not dropping corn right. I asked my wife to forgive me long ago for that. When we were ready to tend it we had a one-horse cultivator with double shovels. We had a shovel we called a bull-tongue shovel. I don't think they were ever sharpened or polished. I don't see how we worked with them. When husking time came it was two men, a boy and a wagon. The team used to travel the row, and a man on each side with two rows and a boy to take up the down row. I was that boy for a great many years. I was a tall, lank six-footer and had to bend almost double to get the corn. Whenever a man would drop an ear he would give it a kick under the wagon and I had to lean over and pick it up. If there is an invention in this country that helps the boy it is nothing but a "throw board" and one man in a wagon. That is the best thing that ever happened to get rid of this mean work for boys.

Then came the time to haul the corn to town in the fall. We took it to town and sold it in the ear, got the money and spent it. How do we do now. The sloughs are all green, for the land is tiled. When we have land to plow we get four big horses on a double plow with a spring seat, and we can turn under four and five acres a day. When planting time comes it is another spring seat and four horses, and we plant two rows at a time with one, two and three kernels in one hill. When plowing comes it is another spring seat, and not long ago there was a man from this part of the county selling a plow with a spring seat and a canopy over it, and he sold a great many of them. I am not quite lazy enough for that. Then when we are ready to husk it, it is one man to a wagon. I have a boy 18 years old, and of course I think he is smart, and he says: "Pa, if you will just unload for me I'll put the corn in the wagon."

When we get ready to feed it we get a sheller and put it up beside a 32-foot corn-crib, and now they are so lazy they have a big rubber, and they wrap this around the corn-crib and they don't have to shovel the corn to the sheller. We then haul it to town and sell it and spend the money.

In the 43 years I have farmed there has been some difference in the price of corn. I remember once I loaded up two loads, I drove one and a hired man the other. We took it to El Paso and took it to a man that had a big old store. I drove up and said, "I want to sell two loads of corn in the ear; how much are you paying for it?" He got up and looked at it and said he didn't want it at any price. Said he was buying white corn and yellow corn to make whiskey out of. It was this calico corn. It had just come to the market and I had planted a lot of it. At last he said, "If you will take your corn and go to my farm where I am fattening stock I will give you nine cents a bushel and pay out of the store. Think of that. Nine cents a bushel for that corn and I was going to sell that corn to get married on, and how was I going to get married on \$4.85 that beat me, and store pay at that.

Well, two years after that I loaded up those same wagons, and I think I had the same team. I drove one wagon and Mrs. Fursman the other. so you see I got married anyway. And I want to say to any young man, don't put off getting married because corn is cheap. I drove up to this same store and

said, "What are you paying for corn today?" "I will pay you just what you ask." You know what that means to a farmer, so I thought I would put it up high enough and said, "I want \$1 a bushel for this corn." "All right," he said, "I am paying \$1.08 today." There I was sold again. This corn came to \$128 and a few cents and no store pay about this.

If there is a man in the world that hates statistics it is Fursman. On my father's farm there was a good church and my mother was a good Methodist, and used to make me go to church, and if there was anything I hated to do it was to go to church and hear some old missionary tell how many heathens there were. Ever since then I have hated statistics. But I want to give you first a few. The largest crop of corn we ever raised was in 1891. It amounted to 2,157,000,000 bushels and was raised on 96,000,000 acres. Two billions of bushels of corn. Can any man here guess what a million is?

I was at a house the other day and we were talking about this crop of corn. There was a young lady there, a graduate of a high school. I said to her, "Jennie, how many million does it take to make a billion?" She thought a minute then said, "Oh, I guess a hundred." She had never stopped to grasp how much a billion was. Who can grasp the idea of the amount of corn when you say 2,000,000,000 of bushels. Not one man in a thousand can grasp it.

Now I am going to tell you a corn story, the biggest that was ever heard in this country. We have corn enough today so that if we had a railroad track around the globe, a freight track, and that track was solid with freight cars, no engines, no space at all, and each car taking up 40 feet, and loaded with 600 bushels of corn, we would have more corn than that left. I wish we had that train right around here, and that in Europe we had a couple of switches and that we could switch off a car every twenty seconds. We are doing this every year, one car every minute. But I would want three cars a minute instead of one.

I want to tell you right here, we will never have that much corn planted in this country again. Perhaps in time you will see these figures raised in the amount of corn but there will not be as many acres.

Farmers' Institutes are teaching us something, and that is that you can raise certain crops on certain soil. You must have the right soil and climate to raise certain crops. Some places they have the climate and not the soil. Others have soil but not climate.

Mr. President, I wish you would introduce me as the man that raised 160 bushels of corn to the acre. These people would say, "That is the biggest lie he ever told." You say it can't be done. But I am going to stand right here and convince you that it can be done.

Two years ago I wrote to the State Board of Agriculture and sent them a sample of my corn. I said: "Gentlemen, if you will offer a premium for the best acre of corn in the State you may advertise it by saying that E. S. Fursman will furnish enough for an acre to any man, to the extent of 25." I received an answer that they had made their arrangements already.

I wanted to see what I could do, so I went to work and picked out an acre and tended it the best I could and I sold part of it and made an estimate and we raised 165 bushels to the acre.

This idea of raising a crop of corn was the result of a little thing that happened one morning. I have a boy 16 years old and one morning he said, "Pa, I want some money." "That's nothing new," I said, "I have heard that before." "I must have some new books." "That's nothing new either. You have more books now than you can study." My boy said: "I have got through arithmetic and algebra, and now we are going to take geometry, and I must have a book." "All right," I said, "if you will work three little examples for me in arithmetic you shall have the book." He said "he thought he could." "I will give you these three examples and when you get them solved you will know more than you learn in any other way about corn raising. I want you to tell me how many hills of corn there are in an acre, if you plant it with our little planter, and see how many hills there would be to the acre." "I think I can solve that," the boy said.

The next is: Four years ago the State Board of Agriculture said that in Central Illinois the average crop was 34 bushels to the acre. I think two stalks to the hill is all anyone ought to have. "I want you to go to our crib and get me the ear of corn that will represent 34 bushels, two stalks to one hill and the number of hills you can figure." "That's a pretty hard one," the boy said, "but think I can do it." "When you bring me the ear of corn I want you to tell me how many pounds of my land it will take to produce that corn." This is the answer he gave: "There are 3,488 hills on one acre and that would make 6,976 stalks; that is what I claim to be the right number." He went to the crib and figured it out the best he could and this is the ear he brought me to represent the 34 bushels to the acre (showing a very small ear). It weighed $5\frac{1}{2}$ ounces. If I was to tell you that represents the crop you are raising up here you would say it was not true. You would say "that is only a piece we break up for the calves," and still I say this little ear of corn that weighs only $5\frac{1}{2}$ ounces represents your crop. Now, people say figures don't lie, and they do not. Of course you must look out for tree peddlers and lightning rod agents.

Now, gentlemen, just take your pencils and take these figures down. You came here to get ideas and then you want to go home and study them out. The corn weighs $5\frac{1}{2}$ ounces. That would make 38,368 ounces of corn on one acre. Divide that by 16 gives you 2,398 pounds to the acre. Now if you have 2,398 pounds and divide by 70 you have 34 bushels. You may think two stalks to the hill is too thin for raising corn. It may be so to raise to feed extensively, but with us, who raise big corn, it is enough. Now, if the figures are correct, what is the matter? Here is a nice ear of corn. My crib is made up of this kind of corn. If we thin it down to two stalks to the hill and cultivate it nicely we can raise it right along.

Here is a man who raised 160 bushels of corn to the acre. This ear came off that acre. You don't suppose I went in that business without knowing what I was doing. The best acre of land was that acre and I went to work to see what I could do with it. But before I undertook to raise it, I figured on it. You may call it nonsense to be educated to do all this figuring, but you can't do it unless you commence to figure on it.

I thought to myself, "I am going to take 180 bushels down to Springfield and get that premium."

I fitted the ground in the finest kind of style and I planted it north and south. It was one acre of ten in the field. The rest was planted east and west. I fixed the planter so as to drop three kernels to each hill and soon as it was up I went and put between each hill two kernels about 8 inches apart. Then I thinned the hill out making 4 stalks to the hill and so as to get 13,965 ears of corn. Now, gentlemen, this large ear of 17 ounces, with two stalks to the hill and an ear to each stalk, each ear had 1,000 pounds of soil to produce it.

There must be something wrong when with our deep, black soil, well plowed and cultivated, that we can't make a thousand pounds of soil produce a single pound, isn't there? And wouldn't you be ashamed of that? We don't know how to seed, that is the secret of it and that was the secret of success. I planted three varieties of corn on that acre.

There is a nice ear of Green's early corn and you plant that about the middle of May. There will be about six or seven days of the season when it will collenize. How many of you have gone out when the sun and wind have been hot and dry and seen all the tassels turn white and then said it was so dry you didn't get any corn, when it was only the wind that killed the tassels.

You must plant two varieties of corn, one a few days later than the other. You remember when we used to go out and replant the corn. That is what made the corn years ago. It would be much better now if we did that. So we must plant different varieties to get an ear on every stock, and I don't believe it can be done any other way than by cross fertilization. Now, I want every man here today to try this idea of crossing his land. There may be some men here who think more of the experiments of the great universities, but I do not give a cent for all their experiments, but it is a pity we don't try these experiments ourselves.

Now in the spring just try planting two varieties instead of one. One must be an early variety, the other larger, later and a coarser variety. Don't mix them in the planter, for if you do you will not get a good stand. Three years ago I put in white and yellow and I am going to do it again. It feeds just as well and brings just as much money. If you try this experiment you may take my word for it that every acre will increase from 8 to 20 bushels to the acre, and if you don't find it so you will never see me again.

A number of years ago I was down town one day and a man said to me, "Don't you want to come down and go into the agricultural business? There is a good opening here." Well, I let Mrs. Fursman run the farm and took my horse and buggy and drove into town and went into the agricultural business, and I was there just one year. I furnished the money and the other fellow the experience; but at the end of the year he had the money and I had the experience. I bought a load of wagons real cheap, I thought. Since then I have seen the man that I bought them from and I asked him one day, "What he was selling wagons at!" He told me, "Can you tell me how much it cost to make a wagon? Can you tell me exactly what each article costs that goes in a wagon?" "Exactly." He gave me all the figures. "That don't make the price that you sold them for." "No, but we have to make a profit." I started away. I was the man that took 64 varieties of corn to the World's Fair, so this man said to me, "You know all about corn, don't you? I want to talk to you about corn." But I said, "I must go right down here and see some friends." I was just afraid that man was going to ask me how much it cost to raise an acre of corn, and I couldn't have told him to save my life. I couldn't come within \$3 of it. I said to myself, "See here before you go asking people about their affairs, you had better learn your own business first," and I vowed I would go home and find out. How can we know how to sell our crops unless we know what they cost us?

There are two elevators near my farm, one about a mile and the other farther away. I had rented 40 acres nearest town to a young man and he put it in corn. When it came time to husk corn he had to haul my half three-quarters of a mile to my place and his half he was hauling to town and was getting 37 cents for it. I told him to hold his corn and not sell it at that price, and that I was going to hold mine. Well, really I felt sorry for him. I piled up a big lot of corn and the next summer it came up to 45 and 48 cents. Now I have as nice a wife as there is in the world and she wanted a new kitchen and I had promised her to build it as soon as I sold that corn. "When are you going to sell it?" she said. "When I get 50 cents a bushel." I have one girl about 16 years old and she goes to El Paso to school, and she is an expert bicycle rider and wanted a wheel for a long time. "When can I have that bicycle," she said. "When papa sells his corn you shall have it." "When will you sell it?" "When I can get 50 cents a bushel." Corn came up to 48 cents and then 50 cents, and one night, I shall never forget it, my girl came home all excited, saying: "Mr. Evans is paying 50 cents for corn today and you'll get my bicycle, won't you, pa?" I said, "You keep still I know my business."

Then I quit the straight business of farming. I began to speculate on my corn crop. They say "confession is good for the soul," and I must confess I sent up a prayer that the scorching winds might burn out those farmers so that E. S. Fursman could get a good price for his corn. Corn went up to 54 cents, but I wanted more. Mrs. Fursman said, "Are you going to start the kitchen? it is getting late." "No, I am not going into debt for anything," I said. Corn began to go down and I offered my corn for 50 cents to John Evans. He offered me 49 cents but I wanted 50 cents. After a few days I rushed down and offered it for 43 cents, but he would only give me 40 cents, and I held on to it until I sold it for 27 cents. I am ashamed to tell you Mrs. Fursman hasn't got her kitchen yet and my little girl hasn't any bicycle and she drives the pony and cart to town yet.

Why didn't Fursman sell his corn at a good price? Because he didn't know what the corn cost him. Now I am going to tell you the cost of raising an acre of corn. The plowing is \$1 an acre, the disking in the spring is 21 cents; the harrowing before the planting, 13 cents; the plowing three times, \$1.05;

husking, \$1; shelling, 50 cents for 40 bushels; hauling, 60 cents. The interest I put at \$70, which, at 6 per cent, would be \$4.20; 30 cents for taxes, and you have \$9.41, that it costs to raise an acre of corn, and you can't do it for one cent less.

I have right here with me cards showing corn prices the first day of every month for 32 years, until the last two years, and they kind of beat me. For the last 32 years the price has been 36 cents a bushel, which was a good price. The last two years beat me a little and made me think of what old Dick Oglesby said. I used to go to hear him whenever I could. He is the best man to talk at Farmers' Institutes I ever heard, but when he talked to us Democrats I thought he was the meanest man to talk I ever heard. Mrs. Fursman and I were well acquainted with him and went to hear him once. We had a front seat and my wife stood it as long as she could and finally said, "Elias, I won't sit here any longer and be abused; I am going home." She went, but I staid, and I tell you we got it pretty hard. Finally he said, "You don't read your Bibles enough or there wouldn't be so many democrats in this country."

When we got down to 16-cent corn for two straight years, I thought of what Dick Oglesby said. If we would read our Bibles more, perhaps it would help us out. I am going to study my Bible and see if I can't get helped out of this. I started and I will tell you right here what I found. I found where God commanded the Israelites, the farmer, that every seventh year they should quit raising crops and let their farms rest. Well, I got old books and studied, and you know there is a difference in time, and if we read it now it would be: "Illinois farmers, every fourth year seed your farm all down to clover, turn your stock in, and take your wife and children and go to town and live on your rich relations for a year." Do you see the point? The trouble is we farm too much. If we could let our farms rest a year, the next year we could go home and go to farming and the price of stock would come right up.

I want to say I didn't come here to talk corn to you and teach you how to raise more corn to the acre, so that you can feed more hogs, to buy more land, to feed more hogs and to raise more corn. The majority of young men have land enough, that is sure. If we want to raise more corn and sell it at better prices with more satisfaction than ever, we must study the cost of it.

CLOVER.

By C. C. Perirer, Sheffield, Ill. Read before the Bureau County Farmers' Institute.

There are three principal elements of fertility essential to the growth of all plants. These are nitrogen, potash and phosphoric acid. All of our cereal plants and grasses, clover excepted, are nitrogen feeders, consuming much more of it than of potash or phosphoric acid; consequently nitrogen is the first element of fertility to become exhausted in the soil. Some means must, therefore, be found to restore this element as cheaply as possible, and obviate the necessity of purchasing commercial fertilizers to maintain the fertility of the soil.

Barnyard manure can usually be obtained in sufficient quantities to replenish the potash and phosphoric acid, but not one farm in a hundred can supply enough to replace the nitrogen consumed by our grain crops. It is just as impossible to grow large crops of corn, oats or timothy without an abundance of nitrogen in the soil as it is to make ice without water, and yet we see some farmers growing these crops in rotation, year after year, not knowing that they are soil robbers. Nature has not stored inexhaustible fertility in the soil, but she has provided means by which the elements of fertility may be restored, either by the application of fertilizers or the growing of some plant that will draw nitrogen from the air and store it in the soil for the use of those plants which do not possess this power. Nature has wisely provided a family of plants called Leguminosæ, or Legumes, which have this power of drawing nitrogen from the air, thus making the soil richer in this element than it was before. To this family belong the clovers, beans, peas, vetches, pulse, tares,

wild indigo, rattlebox, shoestring, and such shrubs as wisteria, robina and many others; also many forest trees, such as the locust, logwood, mahogany, etc. There are 6,500 known species of legumes. Most grasses throw out their roots horizontally near the surface, while the clovers send down a long, straight tap root three or four feet in length, and often fifteen or twenty feet in alfalfa, thereby obtaining nutrition from the subsoils which can not be reached by the other grasses. For this reason clover is far less exhausting upon the surface soil, in its consumption of potash and phosphoric acid, than are other farm crops. But the most striking difference between the clovers and other grasses is in their power to increase the fertility of the soil in a way that has only been recently discovered. This mysterious power of enriching the soil has long been known to practical farmers. Even as long ago as two thousand years, the old poet, Virgil, recorded it as follows:

"At least where vetches, pulse and tares have stood,
And stalks of lupines grew (a stubborn wood),
The ensuing season in return may bear
The bearded product of the golden year.
For flax and oats will burn the tender field,
And sleeping poppies harmful harvest yield."

He gives directions for sowing legumes as follows:

"Sow beans and clover on the rotten soil.
* * * * *
Vile vetches would you sow, and lentels lean,
The growth of Egypt, or the kidney bean?
Begin when the slow wagoner descends,
Nor cease your sowing till mid-summer ends."

While it has been known for centuries that clover and other legumes possessed this fertilizing power, it is only a few years since scientists discovered that clover obtains its nitrogen from the atmosphere by means of bacteria or microbes, found in the little knots, or tubercles, on the clover roots. Prof. Henry, of Wisconsin Agricultural College, has pronounced this "the greatest discovery of the age." Prof. Helriegel, of Bernberg, Germany, was perhaps the first to make this discovery in Europe, while Prof. Atwater, then of Middletown, Conn., was pursuing similar investigations in America. Prof. Helriegel conducted an extensive series of experiments, covering several years, by which he established beyond question these facts: 1, That the cereals and other non-leguminous plants are wholly dependent upon the available nitrogen in the soil, and have no power whatever to obtain it from the air. 2, That the clovers and other legumes obtain nitrogen from the air by the agency of bacteria in their root tubercles. 3, That unless these bacteria, or microbes, are found in the soil, clover will not thrive until the soil is inoculated with them. 4, That these little knots, or tubercles, are not found on the roots of clover unless the microbe is present.

Here, then, is an explanation of the difficulty in securing a stand of clover on the lands that have never been seeded, and also on the new lands of the west. Sometimes other legumes have grown on these lands, either in a cultivated or wild state, thus inoculating the soil with microbe, and on such places a stand is secured. This will account for clover growing luxuriantly in spots and entirely dying out on the rest of the field. It will thus be seen that an examination of the clover roots will determine whether the tubercles are present, and if not, it only remains for the farmer to inoculate the soil with the clover root microbe, by spreading a light dressing of barnyard manure made where clover hay has been fed, over the field, and the tubercles will appear and the clover thrive.

These statements which I have set forth relative to clover have been fully corroborated by other scientists than those mentioned. A more complete account of these discoveries may be had in "Clover Culture," by Henry Wallace, and in Bulletin No. 16 of the United States Department of Agriculture, and Bulletin No. 29 of the Illinois Experiment Station.

It has now been shown that nitrogen is the element of fertility most needed to grow large crops of corn, wheat, oats or timothy, and that clover can draw it from the boundless atmosphere and store it away for the use of these plants.

Knowing these facts, the immense value of clover as a fertilizer, to say nothing of its feed value, of which I will speak later on, must be apparent to every intelligent farmer. We will now look over the different varieties of clover to see which are best adapted to this latitude and our wants.

The principal varieties are the common red, mammoth, white, alsike, alfalfa, Japanese, crimson and sweet clovers, of which the first four are the only ones of special value in this locality.

White clover is so well known that it needs no description further than that it differs from other clovers in being perennial, and that its place is in the pasture with blue grass, to which it supplies nitrogen. It is a valuable honey plant and produces a sure crop of seed, because of the pollination by bees.

Alsike, or Swedish clover was by early botanists thought to be a cross between the red and white, but it is now known to be a distinct species. It is believed to have been first cultivated in Sweden, and derives its name from the village of Syke in that country. It is considered especially valuable for lands that are too low and wet for either the red or white clovers, and makes a good quality of hay. It is a valuable honey plant.

Sweet clover is better known here as a pernicious weed, growing along the highways where it has been sown by bee men on account of its great value as a honey plant. But in some of the dryer portions of the west and south it has considerable value as a forage plant; and as a fertilizer of worn-out soils it is the equal of any of the clovers. The Mississippi Experiment Station has demonstrated its value for these purposes in that state.

Scarlet, or crimson clover has of late years been highly recommended by many seedsmen, but numerous trials by experiment stations seem to show that it is not adapted to the corn belt. The Illinois Experiment Station, in Bulletin 46, arrives at the following conclusions: 1, Crimson clover is less likely than red clover to succeed in Illinois. 2, Drouth and cold are its great enemies—notably the former in the early life of the plant. 3, If benefits may be had by acclimation, they have not yet become sufficiently established to be noticeable.

So far as our present knowledge of clover extends, the common red and the mammoth are of the greatest value for this region. Henry Wallace, an authority on clover, classes the mammoth as a late maturing variety of the common red, both having the same botanical name—*trifolium pratense*. The common red is the most valuable when hay, seed and the restoration of fertility are all that is desired. But where hay is not desired, the mammoth is regarded as best for fertilizing and for seed. It makes but one crop in a season, but is much more certain of producing a seed crop than the common red. Because of its rank growth and coarse stems, it does not make so good a quality of hay.

HOW TO SOW.

The amount of seed required to sow an acre varies according to the end desired. But as a rule too little, rather than too much, is sown. It is poor economy to get half a crop from a thin stand, when a few more pounds of seed per acre would have produced a full drop. Twelve pounds of seed per acre, when sown alone, or eight to ten pounds sown with a peck of timothy, are considered sufficient. It must be borne in mind that a heavy stand of clover, evenly distributed over the land, causes a more thorough fertilization of the soil than a thin stand. The best time to sow clover is as early in the spring as possible. Success will then depend largely upon the amount of moisture and the character of the land seeded. In sowing with spring grain, I found it best to sow the clover seed after the grain has been harrowed once, and then to harrow again. The best success has always been attended with the earliest sown grain. I have tried sowing oats and clover on stalk ground and cultivating both in together, but the result has not been satisfactory on heavy soils. Germination is uneven and much seed is covered too deep to grow.

Experiments on the depth of covering clover seed seem to prove that from nothing to one inch is sufficient for Illinois soils. During the past few years there have been many failures in securing a stand of clover on old lands, in this county. The fault has been laid to unfavorable seasons, but I am firmly convinced in those cases which have come under my personal observation that it was because of the absence of the clover root microbe in these old lands. I have during the past fifteen years seeded many acres of land for the first time since it was native prairie, and have met with the usual difficulties in securing a stand of clover, until the last few years. Several years ago I seeded a piece of old land. The clover came up nicely in the spring, but later on all died except two or three acres at one end of the field. A half mile above me, on another farm, was a clover meadow from which the water came down and overflowed these two or three acres where the clover lived. At the other end of the field was another flat piece overflowed by water from old land, in the same manner, and yet not a spear of clover lived on that part of the field. About this time I read of the German scientist's experiments in inoculating sterilized soil by pouring water on clover sod, letting it run down through onto the earth in which his clover plants were growing, or rather dying—for they had ceased to grow—and soon after the plants began to thrive, tubercles formed on the roots and the microbe was found in them. Now, in the instance which I have mentioned, was not the life of the clover on those two or three acres due to inoculation by the water from the clover field above?

Two years ago I seeded a piece of old land for the first time, sowing timothy in the fall and clover early in March, and top-dressed the whole piece with barnyard manure, spread as thinly as possible, and secured a perfect stand. Nor have I ever failed to secure a perfect stand on old land when treated in this manner, and it is the only way I would recommend for the first seeding of clover on such lands. I am of the opinion that clover seed might be sown with success on fall grain or timothy, just before the ground freezes, although I have not yet tried the experiment. It is noticeable, however, that seed which falls from the plant and lies on the ground in winter, covered by freezing and thawing, rarely fails to grow in the spring.

Last spring, I hauled the waste, trampled under foot by the cattle where the clover seed had been hulled, and spread it thinly over five acres of stalk ground, then sowed oats and cultivated in, securing an excellent stand of clover; as good, in fact, as the rest of the field on which the seed was sown by hand in the usual manner. This was a cheap way of seeding and fertilizing at the same time.

Clover sod can be plowed under, a crop of corn grown and the following year plowed again or cultivated deep enough to bring the sod to the surface, sowed to spring grain and the clover seed thus brought to the surface will grow and reseed the land. This method has been thoroughly tested and is the common practice in some parts of Wisconsin. I have never tried it, but am prepared to do so this coming spring. It is a well known fact that clover seed will be in the ground a number of years, if covered too deep, and then grow when brought near enough to the surface to be acted upon by the proper degrees of light and heat. I once tried hill-manuring of corn, taking for that purpose finely pulverized manure from a stock yard, where clover hay had been stacked three years before, and putting in a shovel full in each hill. A few weeks later I was surprised to find an excellent stand of clover growing in every hill of corn.

CLOVER AS FEED.

That we may fully appreciate the value of clover as food for growing animals, I desire to call attention to a few established facts. Farm animals obtain the elements of nutrition which enter into the composition of their bodies, wholly from the food which they eat. Stock foods are classed as either nitrogenous or flesh formers, and carbonaceous or fat and heat formers. Nitrogen enters more largely into the structure of the muscle or lean meat, and is therefore most essential for the growth of young animals.

Chemists have determined that animals require these elements in the ratio of one part nitrogen to five and four-tenths carbon, which is the German standard for a "balanced" food. Clover hay, properly cured, has a nutritive

ratio of 1:5 6-10, thus being in itself a nearly perfect food, supplying the flesh formers and fat formers in the right proportion. Any farmer who has fed cattle in the winter season on clover hay and corn must have noticed the improved gain over timothy hay and corn. Timothy hay has a nutritive ratio of 1:12 7-10 and corn 1:9 3-10, both being highly carbonaceous and deficient in nitrogen.

Under the present system of crowding young animals for the market, it is absolutely essential to balance up the corn with some food rich in nitrogen in order that the lean meat may accumulate in proper proportion to the fat. This can only be done, outside of the grass season, by feeding oil meal, cotton-seed meal, bran, clover or something else equally rich in nitrogen. Farmers, as a rule, will not feed anything that can not be grown on their farms. Therefore, clover is the cheapest and most valuable feed that can be grown on the farm which will supply nitrogen for the young animals, not even excepting the poultry nor the swine.

Clover should be cut for hay when nearest to full bloom, or when about one-third of the heads are brown. Chemical analysis has shown that hay made at this stage of its growth contains the most nutriment. One important fact must not be overlooked and that is, that no outside moisture, in the form of dew or rain, should be upon it when put into the barn or stack. It is this outside moisture, and not the juice or sap in the plant, that causes clover hay to spoil in the stack. It is a wonderful absorber of moisture and must, therefore, be stacked in the middle of the day, after the dew has dried and before the dampness of evening falls.

CLOVER AS A SEED CROP.

The value of clover, either as a fertilizer or as a hay crop, is sufficient reason for growing it. But aside from these objects it has another value, viz.: As a seed crop, which is no inconsiderable amount in the economy of the farm. The yield of clover seed may be placed at from two to six bushels per acre, and the price on the farm at from three to seven dollars per bushel. It will not be far out of the way to place the average at three bushels per acre, and the price at \$4.00 per bushel, making \$12.00 per acre gross income from the clover field, after having taken off from one to three tons of hay per acre, to say nothing of the threshed hay which is well worth the cost of hulling the seed.

To secure a seed crop from the common red, the first crop should be cut for hay about the 20th of June, although it may be cut earlier or later, with success, if the season is favorable. Should there be any bumble bees' nests in the field it might be well to instruct the boys not to disturb them, as the seed crop will depend largely upon their work in fertilization. A bountiful seed crop is certainly abundant compensation for a few bee stings. The popular belief that the first crop does not produce seed is erroneous. It produces seed in small quantity, because of imperfect pollination from lack of bees and other insects so early in the season. The second crop is cut for seed when all the heads have turned brown or black. Perhaps the old self rake reaper would be the best implement for this work, but, as that has now gone with the sickle and cradle, the mower or binder will have to be substituted. If the mower is used the clover must be cut and raked in windrows when damp, to avoid shattering the heads as much as possible. Nevertheless there will be considerable loss of seed in this way. When the clover stands up well I have found the binder best and the waste of seed least. The binding part of the machine is removed and a rack with swinging gate substituted to catch the clover as it falls from the elevators. When the rack is full the driver, by means of a hand lever, pulls open the gate, allowing the clover to slide off in windrows.

It was formerly thought necessary to let the clover lie in the windrow until partially rotted. But with improved clover hullers this is not required. If the weather is favorable I let it dry two or three days, or until it is in the condition of over dry hay, and then stack and cover well. Hulling can be done immediately or left as long as desired. Treated in this way the hullings

will be almost as valuable as hay, and are relished by stock even better than the best timothy hay. Hulling clover from the windrow is very unsatisfactory work, if the job is a large one, because of the delay caused by dampness from rain or dew. I have known three days to be consumed from this cause in doing what might have been done in one day, had the clover been stacked.

Mammoth clover produces but one crop in a year, consequently it can not be utilized for both hay and seed. When a seed crop is desired it should be mown or pastured in May; otherwise it will be difficult to handle on account of its great length. It is more certain to yield a good seed crop than is the common red, because of the greater number of insects in mid-summer, and therefore the more perfect pollination. Mammoth clover is less liable to injury from insects which prey upon the red, and, in localities where much injury is done from this cause, it is preferred.

NOTES FROM EXPERIMENT STATION BULLETINS.

All clovers have a mechanical effect upon the soil which is very beneficial. The long roots penetrating deep into the earth let in light, heat and air and afford excellent drainage for surplus surface water.

It has been estimated that the weight of clover roots exceeds the weight of that part of the plant which grows above the surface. Consequently their decomposition adds a large amount of humus, or decaying vegetable matter, which is especially valuable in lightening and loosening heavy soils.

Light, heat and moisture, in the proper degree, are essential for the germination of all seeds. No seed will germinate in absolute darkness. This explains why seed will lie in the ground a long time and then grow when the conditions are exactly right.

Clover plowed under makes the ground richer than it was before. But rye, or any other non-leguminous plant, plowed under, simply returns to the soil what was taken from it. They have a beneficial effect, however, in supplying humus to heavy soils.

All clovers, except the white, are biennial; that is growing two years; or, at most, are short perennials, which they are said to become if prevented from flowering by pasturing, and thus last three or four years.

In conclusion, I wish to say that the time has now come when farming can not be successfully done in the old hit or miss way. The successful farmer of the future must know what he is doing and why he does it. He must keep in close touch with the experiment station and be prepared to take advantage of the experiments and discoveries there made.

It is a law of nature that something can not be made from nothing; that the elements which enter into a crop of grain must be in the soil in sufficient quantity to produce that crop; that these elements can not be taken from the soil, year after year, without exhausting its fertility, unless they are returned again in some form.

The successful agriculturist must know this and much more. How shall he know it? Probably not one farmers' boy in a hundred enters an agricultural college. Therefore it seems proper, at this time, to urge the necessity of an easy text-book, containing the rudiments of scientific agriculture, to be used in the public schools of this State and to be prepared by the Agricultural College of the State.

It is a fundamental business principle that every man should know his own vocation thoroughly. That he should devote more time to reading and study of that pursuit in which he is engaged, than to anything else. Let the agricultural paper have precedence over the political newspaper, and the experiment station bulletin over the printed speech of some congressman. Not that the latter should not be read, but that the former should not go unread.

SUGAR BEETS.

By Theo. Hopke, Champaign, Ill. Read before the Adams County Farmers' Institute.

I shall devote most of my time to telling you how to raise sugar beets and what to do with them after they are raised. The experiments during the past year have proved beyond doubt that your soil in Illinois is as good as any in the United states, and I do not see why you could not engage in this particular branch of agriculture with great profit to yourselves and your community. It seems to me that there is only one question that remains to be answered—will you raise beets? The soil of Illinois will last for ten years without replenishing and will raise a splendid crop for you every year. It is much better than the soil of Germany, for there we have to use a fertilizer every year in order that the soil will be as productive as the year before. I believe that industry would pay better here than in Nebraska on account of there being a less amount of sand soil. Experiments have proved that beets can be raised and marketed there at a cost of from \$27 to \$32. A statement of the average cost per acre is as follows:

Rent.....	\$5 00
Seed.....	2 00
Plowing.....	1 25
Preparing and seeding.....	1 00
Cultivating (five times).....	1 00
Thinning and bunching.....	5 00
Hoeing twice.....	6 00
Topping.....	4 00
Lifting.....	1 75
Hauling to market.....	5 00
Total.....	\$32 00

The table represents the cost of producing one acre of beets. A low estimate of the product is twelve tons to the acre. Being assured of a price of \$4 per ton for all he can raise, the farmer is thus allowed a profit of not less than \$16 per acre. Under favorable conditions the product will in many instances exceed twelve tons to the acre.

In regard to plowing the soil before the seeding is done, I will say that the farmer should plow it as deep as it has ever been plowed before. Then a sub-soiler should be put on just behind the plow. Always aim to raise a beet rich in quality, so that it will be valuable to the factory. Do not attempt to raise cow beets. All of the top that has remained above ground will have to be cut off and if this is not properly done by the farmer the factory will have it done at his expense. The proper time to begin seeding is about the middle of April. Prepare your ground as you would do to raise a garden, by having it properly pulverized before you attempt to put in the seed. The seed should not be covered more than half an inch deep. In Illinois you should plant in rows about fourteen inches apart, but you should not plant more than 16 or 18 inches on rich soil, as the beets will grow too large and have a low per cent of sugar. The Klein Wanzleben is the best beet, I believe, for Illinois soil. It is always better to invest an extra dollar and have a good stand than to be sparing of seed and have a short crop. Plant plenty of seed, 20 pounds per acre, and when you go through the thinning process you can take out what you do not want. The difference between a good stand and a poor stand means a difference of four or five tons to the acre. In about two weeks after the beets are planted the second pair of leaves will begin to appear.

They must now be bunched, as it is called. Take a hoe six or seven inches broad and cut right through the solid row of beets, leaving an inch or two containing six or eight beets in a hill, with just the width of the hoe between the hills. You can't transplant the sugar beet, and it don't pay to replant in the same row. If you don't get a stand you must plow them all up and begin over again.

After just one day's rest to let the beets straighten up, go through the rows and thin them to one beet in a hill. Children can do this best. They must go along on their knees, taking two rows. They take hold of the strongest and

best beet in the hill with the left hand and hold it while they take the others out by a sideways pull of the right hand, making just one motion. They learn to do it very fast. Three children can do an acre a day.

Wait three or four days and then hoe the beets thoroughly. This completes the most and hardest of the work. I don't consider cultivating much work. Hoe just around the beets. Bunches of grass must be pulled out in thinning.

Use the cultivator frequently. Ten to twelve acres a day can be gone over with a 4-row cultivator. The larger the beets grow the deeper you must cultivate, getting down five or six inches at the laying-by. You can't cultivate too deep. The beet leaves come to shade the ground completely and there are few weeds after the first hoeing. A second but lesser hoeing is generally necessary. Two or three men can hoe an acre a day at the first hoeing, and one or two men the same at the second hoeing.

A sugar factory will be a great benefit to the laborers of a town. They will have work all summer with their own or other's beets. Those under contract to furnish beets will get credit at the stores, as their pay is sure in the fall. The beet raiser is his own boss. When the men are all working and have money it makes it prosperous for the merchants.

It gives the farmers who raise five or ten acres of beets some ready money in the fall and they can hold their corn. The beet profit is clear money, besides the other crops.

You will raise at least twelve tons to the acre. The cost of raising is \$27 to \$32, including \$5 an acre for rent. A safe estimate of what you will clear is \$10 per acre, and if you own the land, \$15 per acre.

You would better learn first how to raise beets, and when you have demonstrated that you can produce the beets you have plenty of money to invest in factories. I think the best way to teach your farmers is to get some seed and each plant a half acre or a quarter acre. Then I would have you raise some five-acre patches near town, getting a competent instructor, where the farmers can come and see how the work is done, and they will go home and do the same things on their little patches.

You can then make a definite statement to your farmer that you can raise beets at such a price, of such a quality and in such quantity. Grand Island went into the business one year too soon, because they didn't know anything about raising beets. The work must be done just on time. Start with the beet first and the factory second and you will come out all right.

In securing the factory you will do better to put up the money and manage your own factory than to contract with some foreign firm of whom you can not know thoroughly. Factory men know just what they can do and will guarantee to get just so much sugar of a certain quality from certain beets, and you know in advance just what pay you will get. The only unsolved problem for you is that of beet culture. In employing factory men the very best are the cheapest.

ROOT CROPS.

By S. S. Armstrong, Freeport, Ill. Read before the Stevenson County Farmers' Institute.

The value of roots for stock is of more importance than the average farmer gives them credit for. The most of our farmers are so busy they will not take the time to plant anything they have not been used to raising. Now, we have an old adage that "The man who makes two blades of grass grow where one grew before is a public benefactor." So if I can through this paper persuade some farmer to make at least one trial at root growing I shall do some good to my fellowmen.

Now, in writing up a subject of this kind it behooves me to find out which is the very best of the many different kinds of roots we can grow here for stock. If I should ask our horsemen who own the flyers over at Taylor's park they would with one accord say plant carrots. Now I think we should plant something that will give us the largest return for our labor, provided we do

not lose in quality. Now, any one who has ever raised the mangel wurtzel or cow beet will agree with me when I say that we can raise about four times as many bushels of mangels as turnips, carrots or any of the smaller roots. Now if we can find a mangel that will equal the carrot in quality we will have what we want. I have chosen a beet that in my opinion will fill the bill. This beet is called the Chirk Castle Mangel Wurtzel. I will give the description given by the originator. This beet is of Scotch origin. In Scotland every farmer who raises stock plants a field of mangels for winter feed. They yield on good ground from 50 to 60 tons per acre. Hundreds of specimens taken from one field weighed 60 pounds each. The length is about the same as the long red, but it is broader at the top, the diameter being greater and the weight heavier. The flesh is red, of very fine texture and quality, containing less water and more sugar than any other beet, making it more nutritious and milk producing.

Sheep also thrive better on it than on any of the other kinds.

Now I shall try to show you how to plant, cultivate and harvest this crop. First we should have good ground. The best acre on the farm is none too good. The acre that gets the drainage from the barnyard is a good one for this crop if the farmer will keep the weeds down, for that acre is generally the worst for weeds. Having selected the ground, it should be covered with manure—about \$25 worth—ploughed under the fall before and cross-ploughed the next spring. Pulverize with harrow and roller until fine enough for the seed. Drill seed in from 18 inches to 2½ feet apart. If you wish to work with a horse make your rows 2½ feet apart. After the young plants come up chop out with a hoe about ten inches apart. This will give you about 16,000 hills to the acre. As soon as the plants are large enough they should be thinned out, leaving two strong plants in each hill.

Keep clean until the plants are large enough to take care of themselves. Cultivate, weed and hoe 2 or 3 times, according to condition of the crop.

Next comes the harvesting. If the seed has been put in early they will generally be ripe enough to pull by the 10th of October. I take them out very nicely by running a one-horse plow one side of the row, throwing the ground away from the row. I then follow and pull out the beets by hand. The tops can be twisted off by hand. I think the beets keep better than if cut off with a knife. If the ground freezes the beets should be thrown on piles and covered with ground until they can be hauled into the cellar. Anyone raising an acre should make a root cellar under his barn to save the extra labor of getting the beets from the house to the barn. For cattle, sheep, hogs and chickens the roots should be cut in pieces with a spade or on a root cutter. A good root cutter will cost from \$6.50 to \$12.00. They can be cut on rainy days enough to last a week or two. The farmer can soon tell how much to feed at a time. A horse or cow will eat a peck once a day and look for more. Now some one will ask me if the mangel wurtzel is of so much importance why are they not raised to a greater extent in this country? My answer is, the western farmer has not given them a chance to see what they will do for him. I will say here the mangel has less enemies than almost any of our crops, and can be grown on the same ground about as long as corn, if the ground is kept up with manure. This has been proven by Mr. Mechi, of England, who raised 60 tons per acre for six years.

I saw a herd of 50 milch cows at the St. Elizabeth asylum for the insane that had their daily ration of mangels. They were fed from a car holding ten bushels. Two men doing the feeding with scoop shovels.

The farmers of New York, who are in the lead among cheese producers, feed mangels to their milch cows.

Pennsylvania farmers, who make gilt-edged butter worth from 30 to 50 cents per pound, feed largely of mangels during the winter months. Now in order to show you the importance of planting this crop on rich ground I will quote from Gregory's book on "Roots for Stock," he says, on the Sewage farm near London the yield of mangels was 80 tons per acre.

One thing of great importance in order to get the greatest benefit from this crop is to plant early so the beets have all the time you can give them to ripen.

The riper the beets are the more sugar they have. Experiments in feeding steers show that one ton of mangels increased their weight 65 pounds, while one ton of Swede turnips increased their weight 45 pounds. I will now give a statement showing the cost of raising this crop, also value of crop after it is gathered.

DEBIT.	
Ploughing	\$6 00
Pulverizing	2 00
Seeds	3 00
Labor of sowing	1 00
Hoeing, weeding and thinning	15 00
Gathering and storing	14 00
Manure	25 00
Interest, taxes, wear and tear	15 00
Total	\$81 00
CREDIT.	
50 tons beets at \$8.00 per ton	400 00
	\$319 00

Now this crop is estimated to cost from 2 to 4 cents per bushel to raise, so if we count 2,000 bushels per acre at 20 cents per bushel we have about the same.

In conclusion I will say to my brother farmers around Freeport, wake up on this line, plant mangel wurtzels for winter feed and you will find that every dollar spent in raising cow beets will come back to you with interest from the sale of grain or stock.

THE FARM HOME DEPARTMENT.

THE FARMER'S HOME.

[By Mrs. Mary Fell, Warrenton, Ill. Read before the Edgar County Farmers' Institute.

The advancement that man has made in civilization is due, in a measure, to the value which he places upon home. When this great country of ours was discovered, it was found to be inhabited by a race of beings who made their homes in caves or lived in tents constructed of bark or of the skins of wild beasts, but these were used chiefly for shelter from the storm and wind and there was but little if any thought of the taste, comfort or sociability of home. To make and keep a home should be the chief business of man everywhere, for all need and can not do without a home. The rich man as well as the poor man labors for his home, and this home is not only for all but is for all of life; from the cradle to the grave we must have a home. We find in home a peace and comfort and happiness that can not be elsewhere recognized.

The well being of society rests upon our homes, and they are also the support of the government and the church, and all the organizations that give blessing and vitality to social existence are originated in our homes. It is because of the fact that the home occupies so high and exalted a place in human society that its possession becomes a duty which every man owes to himself, his family and society.

But on this occasion we wish to speak particularly of farmers' homes. Let us look into these homes not as they are in every instance but what they ought to be when we take into consideration the physical conditions by which they are surrounded. For here we have the pure air, the green grass, the towering trees, the singing birds, the murmuring brook and the beautiful flowers, and from the time of the opening of the first bud in spring until the

earth is wrapped in her blanket of snow all nature is spread out before us in a kaleidoscopic view. Certainly then a farm home should be an ideal one so far as physical conditions are concerned. It is true farm homes are isolated and perhaps have not the advantages of culture and refinement that city homes have and yet they are the great head spring of population and have given to the world much of its richest blood, best brain and strongest character. In looking over the world's history we find that by far the greatest number of people who have risen to distinction and have occupied the highest offices were born and reared in farm houses. It is these homes that are furnishing the young men and women for the city's trades and business professions. How important then that the children in farmers' homes receive such training that the homes they shall make and the lives they shall live will truly enrich the world. This home training and the home memories are the hope of our youth. The early impressions of childhood will never be effaced from memory. How important then that we as fathers and mothers should instill into the minds of our children right principles and thoughts concerning the purity and sanctity of home, and nowhere else can this be taught so well as in our farm home. One of the most important things that we as parents should guard our children against is the forming of bad habits. It is true the danger is not so great perhaps in the country as in the towns and cities, but even in farm homes a danger threatens our children from the association of hired help. We often hire some one to help upon the farm of whose moral character nothing is known. This person becomes an inmate in the home too often occupying a room with the boys of the family. If he happen to be a person of good moral character all is well. But if not who can estimate the injury that may be done. Let us therefore watch carefully the associates of our children and be absolutely certain of the character of our hired help.

In first starting out in this home making business there are some things which I think are highly essential for us to remember if we wish to be successful. We should be content to begin on a small scale and avoid making an effort to begin where our parents ended. We should not look upon other homes with envious eyes and covet their fine houses and costly furniture for it does not take wealth to make a happy home. Some of our happiest homes are the most humble. But what is necessary to work with skillfully and adorn the home at first with what will render it comfortable. Then as the years go by and your acres increase let the home keep pace with this increased wealth and let it be supplied with all the luxuries and adorned with all the fine carpets, furniture, etc., that are within your means. The farmer's wife should cooperate cheerfully with her husband in arranging the family expenses and share equally in any necessary self denials and economies. The wife should also receive enough of the finances to enable her to purchase what is necessary in the home. The idea of the wife begging of her husband money which she has helped to earn is wrong. To illustrate: Two men enter as equal partners in a certain business. They both work equally for the good of the firm. The profits are divided between the two partners. Now will you please tell me why, when a young man and woman enter into partnership to do business for life, the same rule should not hold good? Why should one partner hold all the salary and the other one when she wants any of it be obliged to ask for it in a begging way rather than demand it as her simple right because she has helped to earn it just as much as her husband has. It seems to me the day has come when women should be acknowledged the equal of man and as she is in partnership with the man she should receive a certain share of the income, otherwise she is a slave, not a partner.

These are pretty strong words, but they are true nevertheless. Let us remember that it matters not what people may think of us, provided we are true to ourselves and duty and keep our expenses within our income. I know it is necessary sometimes to use the strictest economy in order, as we sometimes say, "to make both ends meet." But there are some things we can not afford to do without. One of the things we must have in farm homes is something to read. Good reading does a great work in the home. In farm homes there is less of the glare and noise of the city to attract our attention and occupy our minds, so that reading is more interesting and does a more educating work. Then let there be more books in our home, and just in proportion as we become familiar with good books will our stock, our finances and

ourselves improve. In addition to good books we must have newspapers. I do not mean the sensational papers of the day that contain the recital of crimes, for we would be far better off to be entirely shut off from such reading. We want that kind of newspaper reading which keeps pace with the world by showing what is going on in it. We also need religious and political newspapers; also papers for the children. There should also be found in every farmer's home one or more good farm papers. For if we wish to be successful we ought to know what farmers are doing elsewhere. Money spent for farm papers, or indeed for any good paper, will bear the highest rate of interest if the advice contained therein is carefully studied and practiced. There is another very important matter connected with this subject of newspapers which I think deserves special mention on this occasion, that is rural mail delivery. I hope the day is not far distant when the farmer can have his mail every day the same as the merchant in the city. Then he can keep posted in regard to the markets as well as what is going on in the world. I think this is one of the things that we, as farmers, should demand.

Another very important thing needed in training children to become prospective home owners is education. Intelligent and mental culture are powerful instrumentalities in the acquisition of homes. This education should begin with careful home training and should be physical and moral as well as mental. I am afraid our young people are not aroused to the value of an education as they should be, for education if it be of the right kind is invaluable. In any line of business education is absolutely essential to success. The successful man in any branch of business is the one who thoroughly understands it.

The time is past when plowing and sowing are all that is necessary to secure a bountiful harvest. The time has come when we must have a knowledge of the soil. We must know the exact nature of the substances which compose it and the substances which are necessary to plant life. Therefore I think that farmers' sons should attend our universities and agricultural schools and thus prepare themselves to make successful farmers. Farmers' wives and daughters should be educated also, for the wife is truly the homemaker. It has been truthfully said, "Men build houses but women make homes." When we take into consideration the many positions she must fill and the different duties she must perform, surely if there is any class of persons who need education it is the farmers' wives. I am glad to note that the intelligence of women in farm homes is increasing, and this enlarged intelligence will increase the intelligence of our homes. The life of the farmer's wife is very often an isolated one, for she has not the opportunity to get away from home and mingle with the outside world as do her husband and sons. I want simply to refer to the physical labor necessary to keep up a farm home in order that we may be able to understand and appreciate the sacrifices that are made by women in these homes. Then I think we will realize that it is necessary that farm homes be so equipped that the labor be made as light as possible. Let the farmer's house be built as convenient as possible and let the kitchen be equipped with all the necessary improved machinery for lessening the work. The kitchen is the most important apartment in the whole house, for here the housewife must spend the greater portion of her time, and if the kitchen is not satisfactory the whole household will suffer in consequence. It takes brains to run a kitchen properly. Every farmer's wife ought to be a good cook in her own kitchen and a lady in her own parlor, and it requires considerable to combine both in one and do equal justice to both.

Of course we like to see things look neat and orderly, but I do not think it necessary to wear out our lives in sweeping, dusting and scrubbing. Of course there must be immaculate cleanliness in cooking and serving the meals. But I do not think it right to sacrifice health and happiness and make everything subservient to the law of cleanliness and order, for there is a limit to any woman's time and strength. Let us therefore keep our homes clean enough for health and comfort and take time to read and rest and thus have time to be the best companion of husband and children.

In all the different walks of life there are tasks that are monotonous and duties that are exacting, and the farmer has his share of worries and perplex-

ities. But after all there is no more night than day, no more sorrows than pleasures, no more shadow than sunshine. What a delightful time it is upon the farm when the long winter evenings come with the stock all comfortably housed and fed. The farmer comes in at night and partakes of a bountiful supper (which the farmer's wife knows so well how to prepare), and gathers with his family around the fireside and though the storm king rage loudly without, let the fire burn brightly within and the time may be devoted to reading, music or innocent games, and certainly the farmer can have a most enjoyable time. Let us make our farm homes so attractive that our young people will find no excuse to get away from the farm. Then when the time comes for them to go out in the world to make homes for themselves, let us send them out from the old roof tree with fond memories and tender recollections of the old home.

ATTRACTIVE FARM HOMES.

By John Upton, Springfield, Ill. Read before the Sangamon County Farmers' Institute.

The subject assigned me by this committee is one of great importance and should interest every one residing upon a farm. There is a wonderful contrast between the surroundings of the farmer and the one who merely stops upon a tract of land—the one lives in the enjoyment of the necessities and also of luxuries enough to spice life to its fullest extent, the other exists (not lives) in the midst of abject squalor, misery and want, the natural result of his own idleness and shameful neglect. There is, however, a very large proportion of the farming community to which neither of these descriptions apply and it is this class that I most earnestly desire to interest upon this occasion.

By a timely suggestion a world of good is sometimes accomplished—a little here and a little there may aggregate a great deal. Even though I live upon a farm is that any reason why I should occupy a dwelling having only four bare, bleak walls and a roof for a shelter from the elements and be content to remain there for a lifetime? I surely have as much room as my friend in the village or the city, and there is no valid reason why my house should not be in touch with the more modern architecture in both the manner of convenience and the style of ornament and beauty. It is often a very costly experiment and one not often satisfactory to add to old improvements, as many here might testify. In the matter of buildings it is generally the better plan to discard the old entirely and build new from the beginning.

Build your house in such style of architecture as will harmonize with the natural contour of your farm and then construct in the most durable manner possible, at the same time giving it the touch and finish of the beautiful and the ornamental.

The house once completed next will be the locating of barns, carriage house, sheds and other outbuildings—locate all of them in such relation to each other as will make the view most pleasing and effective, bearing in mind, however, the convenience and general utility of the surroundings.

Never under any circumstances make a feed lot between the house and barn—there is no more disgusting sight to me than to see a pig pen in close proximity to the family dwelling.

Having the buildings in the main completed next comes what I consider the most important part of the farm arrangement, the laying out and arrangement of the lawn, the orchard and the garden.

Begin all this work by having a well defined plan and if unable to make a proper map or draft yourself it would be better to consult a gardener, and five or ten dollars thus expended will in the end be money well invested. I would suggest that in order to secure the best effect that the more rapid growing trees and vines be planted nearest the dwelling, and as you near the street or highway the smaller and slow growing varieties be placed, always avoiding, however, planting in rows or in any rigid or exacting manner, for by so planting you are at variance with nature and the effect would neither be in harmony with natural laws or restful and pleasing to the weary eyes. I am

speaking now of the lawn. Most especially it should be so arranged and maintained that the first glimpse of it of a summer's morning would be an inspiration to honest, earnest toil for the day and a sure and pleasant retreat after the day's toil is ended, where a quiet, peaceful rest may be enjoyed.

Bear in mind this most important fact that all these things require honest, faithful, persistent work—they do not come by chance. If you desire to keep the boy upon the farm and away from the evil environments of the city I know of no better plan than to raise the standard of the farm above the stoga boots, hog and hominy, by giving more attention to the ornamental and the beautiful so that the farm will indeed and in truth be a home where the mind will dwell in peace and be satisfied.

Sixteen hours a day for work has spoiled many a good farmer boy and made a poor business or professional man of him. The very best business and professional blood is furnished from the farm—being born upon the farm does not make a farmer—there is a natural inclination and if that inclination was more generally heeded there would be fewer failures. Some are born for the professions, some for mechanics and some for farmers. Each has his proper sphere and all are alike necessary and honorable.

Those of us who have chosen the farm should endeavor to honor our choice and resolve to make the world better. We can plant some tree or shrub that will remain after our work is done.

I have no greater pleasure than I find in planting trees and vines and desire no greater monument to my memory.

I sometimes think that in that grand hereafter I will view with greater interest that wonderful tree which stands by the river of life than the paved streets of that beautiful city, though they be paved with purest gold.

FARMER AND HIS WIFE AS BUSINESS PARTNERS.

By Mrs. G. W. Shippey, McConnell, Ill. Read before the Stephenson County Farmers' Institute.

The work of the farmer and his wife is one occupation, wrought by two inseparable beings. Where if either one fails to do his or her part failure or partial failure is inevitable. In order to be successful they must be full equal partners not only in seeing that the necessary amount of work is properly done, but actually knowing and realizing that they can equally enjoy the outcome of the results of their labor in actual money made. When both do an equal amount of work they should have an equal right to the outcome. By an equal amount of work it is not meant that both should work in the fields, for her work in the house is equivalent to his field work. At the present age even more, since by machinery his work is so lightened and condensed, as it were, that the work can be accomplished with a great deal less steps than hers, which is not lighted in this way. In a great measure women must depend upon their wits to cut down the many steps and double the results from the same exertion. Man and wife, in order to be successful, must work in unison, and that with energy, determination, painstaking and good common sense. No man, whether he cultivates an acre for a garden, or a three hundred acre farm, can afford to do anything but his best in a business like way, by which he marks out a plain road to both profit and pleasure in farming. The world's experience is that work alone will not bring success. Marked success is everywhere dependent on extraordinary power. Thought and rest in the daily routine are as important as the bodily exertions which they stimulate.

There comes to all workers the long, strong pull which is necessary to success and which causes bad managers and lazy people to open their eyes in astonishment. People have a right to do as they please, but it would be very nice to see them all successful. Something analogous to a conflict of duties in the moral realm very often occurs in carrying on the work of the farm. It is the point where muscle and brain come in competition and where skilled

direction may be effectually matched against undisciplined force. The farmer can not be in two places at once. He can not cultivate his potatoes while he is cutting his grass for hay, however much either should be done, hence the call for management. Now in order for man and wife to be successful this quality must be developed in both and should be used as a unit.

Many and many a woman on the farm and elsewhere has no knowledge of her husband's business and consequently does not know his financial standing. Often we hear it said: "It beats all now capable some women are, while others are not worth anything for business." This is an unfair assertion, for often brilliant minds are imprisoned by unfavorable environments. But, after all, this same assertion hits the men as forcibly as the women, since not all men by any means, prove to be good business men. So there is no use in slinging mud, but to go to work and better conditions is what we want to do.

Many of our generous and successful men of today are glad to credit their success to the good judgment and helpfulness of their wives. A man who truly loves his wife will not cast her out without a knowledge of their financial standing. We can not carry the idea that all women are capable; on the contrary, there are many so frivolous and extravagant that all are judged unjustly. But would not even these be different if conditions would be so changed as to give them an understanding of real, true life, and cultivate better qualities? Yes, we admit there is room for reformation among this class and this is what we are earnestly looking forward to, to accomplish. That we have very many capable women can be seen in daily life. Our smart women are inexhaustable and we will leave it to some brilliant man to prove that it is not so.

But surely a brilliant man is always glad to note the progress in woman, since his mother, sister and loved one are all women and it is his greatest desire that these will cultivate their talents up to the highest possible standard of intelligence. Because he has brains enough to see that the results of such a state would be excellent. A woman does not always need to cook and keep house to be loved as a wife. There may be no necessity for her to do these things. But she must be his sympathizer. A man likes to be understood and sympathized with. Blessed is the woman that has that peculiar womanly power of influencing men for good. It is a power that comes from a woman unconsciously as the perfume from the rose.

Oh! for eyes to see, ears to hear and brains to understand that we do not live by bread alone. Many and many a woman longs for love who is otherwise provided in every respect. Long habitual thinking that it is the man's duty to provide for his wife has grown it a second nature in him, and in doing this he often neglects the loving little kindness that she longs for and would, if given, prompt her to renewed energy and ambition to do her duty toward him. A knowledge of the true cause of such a matter might right it "Knowledge is power." Ignorance, thoughtlessness and unbusinesslike methods will keep men and women down no matter what calling they follow.

Unity between man and wife is the corner stone of their success, and they must work as equal partners in life. You need not squirm if this strikes you too forcibly. Some will doubtless scorn the idea of the wife being a business partner, since they hold the selfish, narrow opinion that if the wife would have the same free access to the pocketbook that holds the outcome of their equal share of the work in dollars and cents, she would spend it thoughtlessly, while he holds the right to use all of it without her consent. And very often the bulk of the outcome of the whole year's work is spent by him without anything of value to show for it, while she is required to ask for the little she may use and give an account of every paper of pins or spool of thread. This is absolutely wrong. You may think this is exaggerated, but view the matter from all sides and let your minds run back to the many homes you represent and see how many women you will find that do not have to ask for money when they need it. She seldom asks for it unless she needs it badly, and how her pained heart goes with a thud down to the soles of her shoes when refused it. How often, and how very many times too often, we see that all that the wife can expect for her share is board and clothing and a very scant wardrobe at that. The farmer that makes his wife feel that she is an expense to him ought to be exiled. American soil has no use for him.

It is more frequently seen that the farmer's wife works beyond her strength than that she neglects her work, and she should no more feel that she was working for him than he is working for her. But they should both be working for a common interest. When man and wife work together they can cut off the cost of production. When she needs help he can very often help her out if he be willing; just so can she help him and save the wages paid to help. The noble woman who can and willingly does help her husband and saves hire is the right woman in the right place. Then, when he gets to be well off, he will very largely owe his success to the efforts of his wife, as very many do, and he should not then have forgotten that his worthy partner should have equal shares of the spoils. We often hear of man and wife who have lived together for years in what seemed to be comfortable circumstances. At length the man passes from this life and she, living on the homestead, is left to think that there is something for her support, is finally forced to know that indebtedness carried on by him leaves her in straightened circumstances without home or support. Could she help feeling that injustice was done her? Then again, even where he manages to have the property free from incumbrances, law steps in and says, "You shall have a dower."

Friends, there is nothing that grinds harder on an intelligent woman's sense of honor than this said to her who has worked earnestly and untiringly with her husband, and helped to accumulate the property they possess. She so well knows that when they exchanged marriage vows they were utterly destitute of this world's goods, and it was by their mutual coöperation, by close management, rigid economy and hard work by both that they are in comfortable circumstances now. Now then, at the time she loses her husband, that to her is more than property, and just when she needs it most, law says "you can only have a dower, for your children must be protected." As if the mother would not protect her children and try to have property left for them when she too is called away from them. Many children compel the mother to live in close circumstances by taking possession of what rightfully belongs to mother, lent by law to the children. It makes the mother dependent upon the children where, had she what rightfully belonged to her, she might be independent, and the children could do as she did, work to get something, and thereby become better citizens.

When a man passes out from this life, law comes and settles up his estate, gives his wife her dower and sets the remainder aside for children. The fact that she may have been "the main spoke in the wheel" in the accumulation of said property is not taken into consideration. On the other hand, if the wife be called away the court takes no notice of the fact, and her husband is left to undisputed control of the whole, whether he did his part or not, and the children are left with no right to the property except what the father chooses to give them. It is said, "justice is the intent of the law." Propose to place the men in the same position in which the law places their wives, and see them wince. They would think it the greatest impudence imaginable. This unjust, unequal distribution of property between man and wife causes more family discord than any other thing. There is often discord when not perceptible to lookers on. One of the planks in the matrimonial platform should be for man and wife always to have equal property rights and always to consult together about any large outlays of money. Thousands of men would be better off to-day if they had talked matters over with their wives and obtained their consent, before going into any speculation or endorsing a friend. The husband has no moral right to run risks of this kind with money his wife helped to earn. Men should always talk over their affairs with their wives so they may have a knowledge of what is going on, then, when they are left alone they will not be so entirely helpless. Again, the judgment of two is better than that of one. He should never sign a bond without the consent of his wife, for often he is compelled to pay one thousand dollars or more, by which she is affected as much as he. The average wife will not spend one cent foolishly any more than her husband will. The American woman cries for freedom and independence. Let us get out of these old ruts and abandon these old foggy ideas and not call a man "henpecked" and laugh at him when he has good sense enough to see that his best friend, his wife, should have equal rights with him. Probably, in a comparatively few years, these same men, who are

so ready to laugh, will follow. Then they can be particularly thankful to those men who took the lead and by their influence opened the way to success for them. Our aims and endeavors should be to help one another to become better and happier men and women, and slight nothing that tends to this direction.

Every woman should cultivate business habits. Sometimes she may be the bookkeeper of the farm. Then she may know the gains and losses. What pays and what had better be given up, and many times be able to give wise suggestions, and he must not be so purely selfish as to think that she may not possess as good thoughts and be able to suggest as good plans for their good as he. Then she will have a chance to make home pleasant and be able to have father and children think that home is the dearest spot on earth. How can a woman live within her means when she does not know what her means consist of? That she considers it her duty to see to it that the housework is properly done is not disputed. But that the never ending work is oftentimes not the proper exercise for her is plainly evident, seen in the failure of health. She must take her choice between outdoor air and sunshine and the grave. She takes the former. In very many cases she can run the farm successfully if she undertakes it, and still be a refined and cultured woman. Her face may be a little dark from exposure but the noble spirit shining out from her eyes will in a measure conceal the tan on her healthful face.

The home is woman's proper sphere, but out from that sphere she can throw rays of light and goodness that may reach beyond the waters of the ocean. Her ability to cope with business in any form is plainly seen to be equal to that of the average man. "Yes, but we can not allow her to take the lead." If she can manage so they both can fare better should she not take it, if she be the better leader, and not spend a lifetime in want and poverty, just because old custom says he must lead? Live in hope, unfortunate friends, the time will come when the "new wife" will take him by the hand, and he will develop into the "new man." Then all will be sunshine and happiness. There are a great many men as well as women that are poor managers and the good ones do not, by any means, always yoke together for life. Hence, the better one, whether man or wife, should take the lead, with no disgrace to either.

But where is the person that will acknowledge that he or she is a poor manager? No, it is fate, or he will curse his luck. Right here is where the trouble lies nine cases in every ten where there is a failure. Don't try to plow around these stumps but dig them out. These drawbacks between man and wife are but stumps that when once dug out will make the way to success as clear as the morning star.

Time brings changes and we must keep up or be pushed uncomfortably close to the wall. We can't live as people did years ago and prosper. Time changes circumstances and "circumstances alter cases." Sometimes at points but a short distance apart, circumstances vary so greatly as to make all the difference between success and failure. Even where the possibilities of success are very strong, the only absolutely sure way to reach a correct conclusion is to put the matter to a practical test. Consequently there should be a thorough investigation and the intellect should be alert to prevent being misled by unsound arguments and deceitful appearances. It is a peculiar sign of the times that in spite of a knowledge of what is better, men and women are still clinging to old teachings handed down from generation to generation. Is it the men who are to blame, or is it the women who are at fault? Let us look at life in its many phases and we must come to the conclusion that as a rule, it is the woman who either develops a man's character or ruins it. His mother and his wife, in a great measure, mold his character. Hence, in most cases, the final question is not, "What is he like?" but what kind of a woman has he?" If this be true, the question, "How can we better our race?" can be plainly answered, in this, that it is the proper education of our women that will bring about the desired effect.

Not long ago an orator at one of our Fourth of July celebrations, in eulogizing England for the honesty and integrity of her people, said, "In traveling

through England I found that I could leave my grip in my hotel room unmolested, with the door unlocked." Then said, "Could I do that in America with the same safety? No." We can account for that only in this, that in England a good woman reigns, while in America the men have hold of the reins. Laugh if you please, sneer if you like, women are the guardian angels of our race.

No occupation needs the coöperation of the wife more than that of the farmer. True, the farmer and his wife work hard, but so does every man and woman who draws a prize in the lottery of life.

We are a nation of working people. That our farmers work can be plainly seen in the fine residences which they are being able to enjoy. Our country homes are a luxury that we should be proud of. This is a matter we should take into consideration, my friends, when we are inclined to think that farming doesn't pay. Business in town pays a comparative few very largely. The farmer must show himself equal to his city cousin. Shall he meekly submit to such titles as "hayseed," "clod-hopper," etc.? We have very many wideawake farmers who keep abreast with the times by a careful study of the best papers which treat on agriculture, home, social and political life. Such information is in reach of most farmers' families. The time is dawning when the farmers shall rise to their true position, by filling their calling in such a way as to merit the esteem which is theirs. This will be when they and their wives can be full, equal business partners.

There are various ways of making life bring forth something more than material good, ways of securing happiness amidst the toils and cares which are the common lot of humanity. But you say, "How can we be happy when we have to work so hard?" Easy enough, cultivate goodness, helpful hope—that is, try to have a good soul, which causes one to distribute blessings, of which he is as unconseious as the lamp is of its own light. There are persons with souls so thin, so almost destitute of the true idea of a soul, that if the guardian angels were not so keen sighted, they would overlook them altogether. Happy is the person who has that in his soul which acts as April showers upon the growing grass. Is this the selfish person who thinks he should have better rights than his fellow beings? Not by any means. This is not he who holds all property rights over his wife, making her feel that she is indebted to him, almost for her very existence, causing her to regard the profits of the farm his, instead of ours. When this condition will be realized it will be as the striking of the clock. It will mark the progress of a social evolution of the most important character, and one that will lead to vast and beneficent results. Woman is finding her true place and she is gradually taking her place by the side of man in working out the vast problems of civilization and realizing the purpose of the Creator, for did he not "in the beginning create them equal?" "Male and female created he them," and "weighed in the balance," as a whole they are equal today. If the education of women were not constrained and artificial she would stand forth in all the plenitude of her rights individualized. Not dependent but by the side of her husband, and like one of the many strings of a well tuned harp, a prime necessity of social harmony. The false idea that she will be too manly if generally informed has very much retarded her advancement. No theory, no training can educate the masculine and feminine minds to occupy the same plane or flow in precisely the same channel. Nor would it be desirable if it were possible, since it would produce monotony, to which annihilation would be preferable. The duties, as well as the tastes, of the sexes are not identical, but if properly developed, the difference which nature has implanted will produce harmony as the base and treble strings of an instrument enrich the music by combination. It is in the perfect blending of the two sexes where the best results will be obtained, and this alone without a thought of inferiority from either sex will produce perfect harmony. Where this will be secured we may expect peace and tranquility. In the home where man and wife enjoy the rights peculiar to each one's organization, and equal property rights as business partners, with a full understanding of their business, we may look for happiness and contentment on the farm.

HOW THE FARMER'S WIFE PAYS THE MORTGAGE.

By Mrs. Lizzie Waring, Petersburg, Ill. Read before the Menard County Farmers' Institute.

Would that all the wit, the wisdom, the eloquence of the past were mine, that I might in fitting phrase present this broad theme, "How the Farmer's Wife Can Help Pay Off the Mortgage." Had I the pen of a Shakespeare or the silver tongue of a Bryan I might wax eloquent upon this fruitful subject; but alas! I have neither. I am—as a more imposing personage might say,—only a farmer's wife. I am justly proud of that title, and truly thankful that I am a farmer's wife and live on a farm. I am going to tell you only the few things I have learned from experience and observation since upon that farm I first saw the light of day. What circumstances may govern my future I can not foretell, but hope by fortune and true merit I may be permitted to live on the farm the rest of my days, for I know of no other place on earth where I can be as free and independent as on the farm.

I have lived on a farm long enough to know there are ups and downs, sharp turns and crosscuts in farm life which must be met and mastered. I imagine, however, that I do know something about farming; about cultivating the soil and getting happiness out of the ground. I know enough to know that agriculture is the basis of all wealth, prosperity and luxury. I know that there is gold and "free silver," too, in the farm, boys, if only you'll shovel it out. I know that in the country where the tillers of the fields are free everybody is free and ought to be prosperous; but unfortunately all are not prosperous, not financially successful. There is an evil that, like an epidemic, is stalking abroad over the face of the earth and claims for its victims those who succumb to a bad financial policy by encumbering their farms with mortgages.

A mortgage casts a shadow on the sunniest field. The interest eats night and day and the more it eats the hungrier it grows. The farmer in debt, lying awake at night, can, if he listens, hear it gnaw. Is it astonishing, then, that we are asked, "How can the wife help?" It is high time some one was thinking of that. Like a wise physician it is better to make a careful diagnosis of the case before we prescribe. One farmer gets the land fever and thinks he must buy all the land that joins him, and by this transaction makes himself, his wife and children subjects of a relentless tyrant—a mortgage. Now farmer husband, this is a case of avarice, of greed, and not a case of need. You don't deserve help. Get out of debt as soon as you can; and, my dear farmer wife, do not undertake to help pay off such mortgages merely for the name of Large Land Owner, or you will find yourself like the woman who had to labor so unceasingly all her life that when her pastor consoled her with the hope of rest hereafter, she said: "Why, if I should die tonight, resurrection the next day would be just my luck." Then another case, the most malignant type of this dreaded evil. The young people have assumed the obligations of matrimony. They have launched their craft out on the broad sea of life, where it is hard to steer aright at best, and with the increasing cares of a household, begin their career with no guide but ignorance and no helmsman but inexperience. Then shall we, in a few short years, open our eyes in wonderment, when we learn that their farm, a cozy little home, a legacy left them by a dear departed friend, is encumbered by a mortgage? Now is the testing time for that farmer's wife. A time to try of what materials her character has been builded. Hitherto her life has been guided for her. Almost every step of the way has been marked out for her by loving and anxious parents. In her school life her teachers have stood in *loco parentis*, and for a few short years she has been only an amiable echo of her husband. She is now awakened to new responsibilities, to a new life. She signs the mortgage, and by means of that signature she is made acquainted with her husband's true financial standing. She realizes for the first time the bank account will not admit of the reckless extravagance to which she has been accustomed. There is a battle to be fought, a victory to be gained, or a defeat to be endured. This is the time of need. Will she stand by him? If that marriage vow was sealed with true love she will not hesitate, she will not waver; she will be a help-meet and bosom companion to her husband as every true woman will in adversity as well as prosperity, and when they reach the mountain bravely grasp the staff of life, look boldly

to the summit, and taking as her motto, "*Viam invenian aut Faciam*"—"I will either find a way or make one," moves steadily forward to the accomplishment of her appointed duty. No doubt women like these were in Emerson's mind when he wrote—

"How near is glory to our dust.
How near is God to man,
When duty whispers low, 'Thou must,'
The youth replies, 'I can.'"

Yes, farmer wife, you can. In your vocabulary there should be no such word as fail. Trample upon impossibilities and before you mountains will dwindle into molehills and obstacles that seemed unconquerable will be converted into helps and instruments of success. But there is no end to such talk. Let us come to speak of the how of the matter. It is simple enough when you reach it. The conviction of the necessity and the determination to meet it are sufficient antecedents to any possible undertaking. In the first place: Fortify yourself with good nature. Good nature is the cheapest commodity in the world. Equip your home with sunshine and happiness. It is not necessary to be rich to be happy. There is only one way to be happy, and that is to make some one else so; and you can not do it by going 'cross lots; you have to keep on the regular turnpike road. You can not be so poor that you can not help somebody, and charity begins at home. Now comes the great question: What can you do for yourself, your family and your home? You can read the best agricultural paper. You can encourage that husband of yours to attend the Farmers' Institute. Two farmers can scarcely converse together an hour without benefiting each other. And even should one's neighbor be a poor farmer, or a poor housekeeper, one may sometimes learn as much from witnessing glaring defects as great excellences. We seldom "see ourselves as others see us," and are often insensible of our own faults till we have seen them strikingly exhibited by another; then, by comparison, we correct our own. You can educate the boys and girls. Hard times must not be made a barrier to education. I would insist on sending more of the boys and girls to the agricultural college. The object of every school of agriculture is the betterment of social conditions in the country and uplifting the standard of a country living at home. You can instil into your family a love and respect for the farm.

Another great need in this work is more sober, profitable thinking. Form the habit of thinking and working together.

If there is the earnestness and freedom of thought and expression that ought to prevail in a family, each contributes something to the common stock of knowledge, and the help that members of a family derive from each other is no small gain. What a judicious saving of time and labor, by having your work carefully planned out before it is worked out. This is a new year. Are your plans well laid? Well, yes. I had almost forgotten you were going to help pay off that mortgage. You mustn't lose sight of the fact that it is necessary to live while you are about it. It must be done by industry and economy. Don't stint yourself and family in the necessities of life by trying to economize, but rather dispense with useless extravagances. You can not rely on keeping the outgoes less than the income but by your industry you must make the income greater than the indispensable outgo. You must live well. Farmers need good food. Our physical, spiritual and mental happiness depends largely on what we eat and drink. You are a farmer's wife. You should raise chickens and turkeys, ducks and geese, plant a garden, take care of the fruit and cultivate flowers. From these sources you can supply your table with good, wholesome nutritious articles of diet, and that is quite an item, for your table must be well kept. It is the center of attraction in the dining room. Here the "bounty spread before us" must be such that none will be tempted to adverse criticism. "Well begun is half done." Your interest is well founded, and by devoting a little more time and perseverance in this line you can supply the home market and have a surplus to dispose of on market day that will net you a snug little sum.

Nearly every farmer keeps at least four dairy cows, six or seven dozen chickens, and a few turkeys, as a finishing touch to a well stocked farm. From that number of cows you can have three good milkers the year 'round—fresh

cow every three months. You can market at least 20 pounds butter per week. Raising the calves on skim milk, waste scraps, etc., at weaning time they will bring an average of \$7.50 per head. If dairy bred heifers, will command a better price. From the above number of hens you can market 90 dozen eggs per month for ten months in the year. One-half the hens will raise 300 chickens. Six turkey hens, 50 turkeys for the Thanksgiving market. Then there are the tiny little pigs that are sometimes left motherless, or the mother is turned into the fattening pen. And if we would be in it—the greatest industry of the age—we must take care of the hog. I will not continue this but just to show you I am not “counting chickens before they hatch” but giving you true statistics, will read you a leaf from last year’s account book:

Butter, 20 pounds per week at 20c	\$208 00
Calves, 4 at \$7.50	30 00
Eggs, 90 dozen per month.....	90 00
Chickens, 200 at 6 cents per pound.....	72 00
Turkeys, 50 at \$1 each.....	50 00
Pigs, 4 at \$7.50 each.....	30 00
Total.....	\$480 00

This is from the products and by-products of the poultry and dairy. Four hundred and eighty dollars will water an \$8,000 mortgage and keep it from growing.

The returns from home gardening do not overflow the purse, but there is nothing to be lost by having a good early garden. You can not tell the exact amount of garden truck you will use and when extra early a few gallons of peas, beans, etc., to market, will pay the expenses of gardening, provided you do a good share of it yourself. There is always a good market for early roasting ears and plants. I would rather plant early at the risk of having to replant. It is willful waste to buy garden seeds every year. If you have good vegetables save the seed. The great object on the farm under mortgage is to take care of the little things and make everything pay, whether it be live stock, farm crops, or hired help. We are not after the value received in dollars and cents alone by this industry which nature demands. By this daily open air exercise we find rest and a tonic for the tired brain and nerves that are taxed to their utmost by close confinement and the regular routine of housework to which the wife and mother are subjected. We know she is expected to conduct a university, a restaurant, a laundry, a library, and at the same time be presiding health officer, police and president of her realm (an enclosure of four walls). Recreation of some kind is a necessity, and how could you spend an hour or more every morning and evening more profitably than to go abroad with nature and take delight in milking the cows, caring for the downy little chickens, an apron full at a time, and feeding the calves that are always so glad to see you. “The ox knoweth its owner.” If you want to experience genuine finance from this source attend to these small matters yourself. Don’t depend on your husband. I never saw a real practical farmer that wasn’t afraid of a setting hen, nor one who had the patience to teach a calf to drink. In many homes if the wife would assume these duties the saving in the cost of patent medicines and doctor’s bills would be a sum that would swell the interest payment fund.

By cultivating a taste for the beautiful works of nature you will find that farm life does not lack stimulus. Who does not love a beautiful horse or a good cow? The sheep, the swine and even the fowls in the barnyard are worthy our attention, not only for their value in silver and gold but for their own sake. Who does not take a delight in cattle and enjoy a visit to the feeding lots to witness their happiness while satisfying their hunger, and note the loss or gain from time to time? Every farmer’s wife should so familiarize herself with all farm work, that, if necessity demands, she can perform such labor with her own hands or practically direct how to do it. Life is uncertain. You know not what day you may have to assume these responsibilities. When will women in all circles find out that it is honorable to do anything that ought to be done?

The farm encumbered with a mortgage is not the home for idlers. As a wag once said: “Consider these women,” for “they toil not neither do they spin.”

except "street yarns." It is not the home for spendthrifts. They market their produce and straightway spend foolishly the labor of their own hands. It is not the home for the farmer who can run his hands deep into his pants pockets and find nothing there except the seams at the bottom, and then complain aloud that an extravagant woman has done it, and the world is quite ready to side with him. The world is moving, and they must move with it.

Before laying down my pen my imagination brings me before the Menard County Farmers' Institute. With my own eyes I see a varied assembly of farmers. Here are the tall and the short, the fat and the lean, the young and the old. Some have black hair, some have white hair, some brown, some red, and some none at all. And here are the good farmer-wives; the gay and the sober; the meek and aggressive; the calm and the fidgety, before whom I am expected to read these lines. I hesitate. I feel like laying down my pen; but it is too late. I knew my inability to do justice to the topic before I began. I realize it more fully now; but regardless of opinions, be my advice wise or otherwise, I am not going to let my end of the double-tree strike the wheel; and then if I should have to go "Over the Hill to the Poor House" will not make such a fuss over it as Will Carleton did.

WHAT CAN A WOMAN DO ON THE FARM.

By Mrs. Martha W. Ballard. Read before the Mercer County Farmers' Institute.

The business of farming, like all other avocations, must be managed with a view to the profits arising from the investments of capital and labor, and it does not matter whether the investor is a man or woman, the same rules of agricultural law must be observed in order to produce an income greater than the expenditure. "What can a woman do?" is the query suggested in the subject I am to discuss, and I am left to suppose that I am to talk of woman as a farmer. But it does not matter whether we consider the management of the farm as entirely under the control of a woman or whether her place as only a helpmate to the farmer. In either case there is much for her to do, and well for her, her family and farm, if she does it well. If we consider the farm under the entire management of a woman, we may better understand the subject under discussion, and for the present I will so consider it. A farmer woman requires the same sound judgment as to the variety and rotation of crops, that the farmer man is supposed to possess, by the inherent right of his manhood. She must know the entire nature of her soil and its adaptability to certain crops; she must know the lay of her land and its exposure to the rays of the early spring sun; she must know the trend of the water shed and its adaptability to a system of drainage; she must study the natural fertility of the soil and its requirements as to fertilizers. In fact, to be a successful farmer she must acquaint herself with all the details of the business, and oh! what there is to learn. Why, I want to say here, that any woman who has a common school education, and then has mastered and knows all the details of farm business, has a liberal education; in fact, she is accomplished in a far more useful line than many a young lady who has proudly carried her diploma from the classic halls of Vassar. What details, what knowledge, all useful and practical and necessary to the success of a farmer. In all the avocations of manhood, there are none which have so much variety, so much that is new, so much that has its own particular season, and then passes by till another year has measured its cycle round. Sister farmers, what can you do? Why you can do everything that man can do, but you must do it intelligently. If you expected me to exploit some specialty adapted to women, I shall have to disappoint you. Farm specialties are not usually profitable unless backed by a great capital capable of sustaining heavy losses and tiding over for another year, perhaps several years together. Small capital requires variety farming in order to meet losses of one variety by the success of some other. If the farm is to be made to yield a revenue, and by this I suppose profit is meant, it must be managed in some such manner that the produce sold will cover all the expenses of farming. How many a farmer can tell at the close of the year just how his income stands? The woman who undertakes to farm should understand how to keep a farm book.

This is an essential, if you would know, at the close of the farm year, just how your account stands. Suppose you own 160 acres of good land, well improved. This should be your first item and you should charge yourself with about \$8,000 capital invested. The rental of this land is worth \$500, having the use of it, it goes to your credit, then you add taxes, interest, repairs, cost of machinery, labor wages, cost of seed and all these things till you find a huge bill against yourself, and you begin to feel that a revenue ought to come in soon. Your income begins when your first butter and eggs go to market. Every pound of butter and every dozen of eggs should be carefully set down. This is your side of the ledger. Then your veal calves and spring chickens, and at least by early June your hogs should begin to find their way to market, and you should always have a few good porkers ready for the buyer when he comes around, and later on a few steers will make figures on your side of the ledger that will gladden your eyes to behold. By this plan of keeping account between yourself and farm you will always know where your revenue comes in, and experience will soon teach you what, if any, specialties you may adopt. I do not think, as a rule, women should adopt special farming. Specialties require experts, and experts come high. Specialties have their season, and when at all successful there is rush and worry during that season, then comes idleness and loss of time. In variety farming all the time is occupied, from the time the Biddy hen first announces her new laid egg in the spring till the last load of corn is cribbed in November and the last lot of cattle and hogs have gone to market at midwinter. There is no lost time and no time to lose. Sister farmer, farmers' wives and daughters, there is much you can do, or you can do it all, or what is better, you can know that it is done and done well. It is for you to see that nothing is half done, or done in a slipshod sort of a way that is worse than total neglect. If you understand the full details of your business, you will have plenty to do to control it. You will not lie down at night and arise in the morning and say, "Oh! well I may take my ease, my crops are growing whether I work or not." This taking it easy does not belong to a farmer's life. You all know that, and you have not invited me here to tell you how you may farm for a revenue and live a life of ease at the same time. But you may think me too partial, or my ideas too crude. Perhaps I am not womanly enough in talking to women on this interesting theme. I have omitted all the flowers, not only on the farm but in my rhetoric as well. I have not described to you the beauties that should surround the farmer's home. I have said nothing of beautiful lawns, flower bordered and dotted with rare and beautiful shrubbery. I have said nothing of the wood driveways, orchards and green gardens that go to make a lovely home, and yet, may I say it, that many of those things are essential and under your special charge. You are not to perform the general farm labor, you are only to know that it is done, and by having a thorough knowledge of the work, know that it is done right. Your special work is in the home, and in its outward neatness and adornments you do more than you might realize towards the revenue of the farm. Your best customers are people who abhor slovenliness. If your home is well kept outside as well as in, there will be a greater demand and better prices for your produce. To the purchaser your butter will be sweeter, your poultry will be fatter, you will sell none but the freshest eggs and your customers will always pay you better prices, because they know of your cleanly, tidy habits. Yes, sister farmers, these are things you can do, and they are certainly things that are essential if you would successfully manage your farm in order to produce a revenue greater than the expenditures.

WOMAN'S KINGDOM.

By Mrs. J. W. Richards, Joliet, Ill. Read before the Will County Farmers' Institute.

No word in the English language is sweeter than "home." Out of this grand syllable rush memories and emotions. The murderer in his cell, his heart black with crime, hears this word and his crimes have not yet been committed. His heart is yet pure and free. In his mind he kneels at his mother's side and lisps a prayer. Then he weeps and for a while is not a murderer.

What makes that small unopened letter so dear? It is from home. From home—that spot to which his heart is tied with unseen cords. Perhaps he left home caring little for it. Perhaps harsh necessity drove him from its tender roof.

What makes the remembrance of the old home so dear to us? Is it not because there the storms of life were turned away from us by those who bore the blasts to keep us in our innocence? We hear that the presidents of the United States have complained very naturally that they are denied that privacy which is accorded to the lowliest citizen in the land.

If ever home affections are grateful things they are grateful to the poor. The ties that bind the wealthy and proud to home may be forged on earth, but those which link the poor man to his humble hearth are of truer metal.

The greatest stronghold a nation has is its homes. If those who rule the destinies of our nations would but remember this! The home at the present time needs more care than ever, for its government and our republic depends on what is learned at the fireside. The influence of the mothers is not confined to their homes alone. No, it is felt throughout the nation; in politics and society, felt where they are never seen.

I have read of one mother, and she was a stepmother too, who condescended to marry Tom Lincoln and became the angel of Abe Lincoln's life. She saw the ability of the boy. She put away rags and taught him habits of taste and refinement. She transformed a hovel into a home.

And again, we can not have too much light and sunshine either in our lives or in our homes. We may live, but it is not all in life to live. Merely to exist is but a small part of our work in this world. We should so live that body and mind are at all times in their best condition. We are then ready to do whatever duty may require of us. Many women and children have been sacrificed to save the carpets and keep out the flies. Many a fit of illness has resulted from the same cause. Many a disappointed, cheerless life can be traced back to sunless rooms as a beginning. Sunshine, light and air are as much food for body and soul as the fruits, grains and vegetables we eat.

There are bare cabin homes that have been remembered with pleasure because of the beautiful loving presence there, and stately palaces which leave the impression of an iceberg. A sunshiny husband makes a merry, beautiful home worth having and worth working in and for. If the man is considerate and sympathetic his wife sings over her baking and mending and renews her youth in the security she feels of his admiration. You may think it weak or childish if you please, but it is the admired wife, the wife who hears words of praise and receives smiles of encouragement that will do all she can to make home pleasant.

It is wonderful what a tasteful woman can do in the way of making home attractive. She can make a garret beautiful at little cost, for the beauty of home depends more upon a refined taste than wealth. A little skill can make brackets and shelves for the walls. A trifle saved from daily expenses can now and then buy a new book. She can go to the woods and gather leaves and ferns for adorning the unpictured walls. The expenditure of a few shillings can make the plain window into an arbor. In these and many other ways a plain room can be changed into a scene of beauty.

Nothing in the home needs to be more carefully watched and cultivated than the conversation. It should have the spirit of love. Home conversation needs more than love to give it its full influence. All wise parents should seek to train their families to converse on subjects that will help, instruct and refine. The table is an excellent place for this kind of education.

Many novels of the present day are responsible for the character of our boys and girls. They teach a laxity in moral life which is appalling. If mothers would not allow their children to read books which they have not themselves first looked over, much evil might be rooted out. The influence of bad books is stronger and more harmful than that of evil associates, because it works secretly. This subject should be one of great interest to par-

ents, so much depends upon our boys and girls. The time has come when we need more honest men. Men who will be honest and upright. Men who will stand for the right and can say no.

Woman's kingdom is her home; there she may reign supreme, doing much for her country's good. In her own sphere she has petty vexations to bear that would break the spirit of any man alive. Bear in mind that many over-taxed wives are mere bundles of nerves, so to speak, and subject to a thousand and one irritations that man knows nothing about. The work of a wife and mother is as hard as that of a man. Dr. Edward H. Clark declared that the duties of a mother of a family required as much toil of brain and body as the captain of a ship. The quiet way a woman will dishwash herself away for her husband and children is a marvel. No sooner is it done than it is to be done over again. Men take jobs, work on them and finish them and they are over for good and all. But she washes Monday after Monday, the same garments, until there is nothing left of them. She mends the stockings with tireless fingers week after week. Every morning the rooms are put in order, only to be in the wildest disorder by night. It's the old saying, "A man's work is from sun to sun; but a woman's work is never done."

The work of woman is not spoken of by most men sensibly, until they have done it themselves. Gentlemen, it is easy to talk, but just try it on a very moderate scale once and you will honor working women. Do a small wash and then remember that a woman turns out two hundred and more garments a day, and never again speak harshly to a woman of laundry as unskilled labor. Try it; don't talk, just try it.

A great many small things are overlooked because they are so little and common. Take for instance the mother who has been broken of her rest with a small child. She would like to sleep a little while when breakfast is ready, but uncomplainingly she takes her seat at the table. Though exhausted and weary she serves all with a refreshing cup of tea or coffee before she does herself. Do you hear her complain that her breakfast is cold before she has time to eat it? Do you call these small things? Try it and see. It is these little things which are tests of character. It is by these little self denials, borne with such self-forgotten gentleness, that the humblest home is made beautiful, though we fail to see it until her chair is vacant and the hand which kept in motion all this domestic machinery is powerless and cold. There is too little brightness in the lives of women in the country. They have too little help. The nurse in a house where there is a baby to care for ought to be set down as one of the regular expenses, as much as the potatoes for the family. A mother's health is worth more than additional acres or fine live stock.

The heart should not be allowed to grow old. Life should not have lost its charm at forty years. And yet, how many women are faded and shattered in mind and health long before forty. All the joys of life are not in youth's morning. Next to the love of her husband nothing so crowns the mother's life with honor as the devotion of a big son to her. I never knew of a boy turning out badly who began by calling his mother his best girl. Any man may fall in love with a fresh-faced girl, and the man who is gallant to the girl may cruelly neglect his wife in after years. But the boy who is a lover of his mother at middle age is a true knight who will love his wife to the end. There is nothing so chivalrous as the love of a big boy for his mother.

The time will come when your mother's hair will be gray and her forehead crossed and recrossed with wrinkles. Take care while you are young that you can think in after years. "I never whitened a hair of her dear head. I never marked a sorrowful line in her face." Regrets for unkindness to a mother often come too late. A little boy was sailing a boat with a boy who was much larger than himself. The boat had sailed a good way out in the pond and the big boy said, "Go in, Tim, and get her. I have been after her all the time." "I dare not," said Tim. "I'll carry her all the way home for you but I can't go in there. She told me not to." "Who is she?" "My mother," said Tim softly. "Your mother. Why, I thought she was dead," said the big boy. "That was before she died."

Honor the dear mother. Time may have scattered her hair with grey, plowed deep furrows on her cheeks, but is she not beautiful still? Her lips

may be thin and shrunken, but those are the lips that have kissed many a tear from your childish cheek. The eyes are dim, yet they glow with the same holy love that will never fade. Ah, yes! She is the dear old mother. The sands of life may be nearly run out, but feeble as she is she will go further and reach down lower for you than anyone else. You can not walk into a midnight haunt where she can not see you. You can not enter a prison whose bars will keep her out. When the world shall forget you, when it leaves you unnoticed, the dear old mother will take you up in her feeble arms and carry you home, and tell you of all your virtues. Yes, honor the dear old mother. Love her tenderly and cheer her declining years with tender devotion.

HOUSEHOLD ECONOMY.

By Mrs. Walter H. Rowley, Marley, Ill. Read before the Will County Farmers' Institute.

Household economics. Webster defines household as "family life, domestic management, belonging to the family," and economics as "the science of household affairs or domestic management."

We therefore see that the word economics is rather a repetition of household except that it is the science.

I will then slightly change my subject and call it home economy, as I think the word home is dearer to our hearts and more musical to our ears than household.

The home economy is supposed to rest principally on the wives and mothers and it is a very true, though an old saying, that a woman may throw out more with a spoon than a man can bring in with a shovel. The truest and highest type of a housekeeper is one that knows how to manage and economize her house work and business. Be the home a mansion or an humble one, she must use care and frugality from the time she sifts the flour in her bread pan to the using up of the bits left on the table and the stale pieces. We housekeepers are all familiar with the many ways and the dainty dishes that may be made of the same. If not we can soon become familiar, for there is scarcely a newspaper or a periodical printed nowadays that does not have a corner for the home and receipts for making all sorts of dishes.

I verily believe there is much false economy practiced and perhaps I might say, ignorant economy, for I think if there was a better understanding of the science of home economy in many instances it would be much better for the health of the family and certainly better for the pocket-book. For instance we may take the common homely potato. In the rural districts we find the potato on the table twice and often three times a day.

The great popularity of the potato is due to several causes, its negative flavor, cheapness, its reputation for nutritive value and wholesomeness. The first two causes are quite in its favor, and considering these things it is a great pity that the potato does not possess the other virtues with which it is generally credited. It is quite deficient in nitrogen, is composed largely of starch, lacks porosity and consequently hard to digest. There is probably no other article of food so often forbidden the patient by his physician as the potato. So we see it is poor economy to use too many potatoes, although in its cultivation it has been greatly improved within fifty years. The big mealy potatoes with which we regale ourselves unduly are very different from the watery tubers our grandfathers grew. Then there is the onion, carrot, celery and many other vegetables I might mention that we ought as a general thing to use more of.

Let me tell you my busy farmer friends there is no work that will pay you better on the farm for doing or letting your sons or hired man do, than to have a good garden; raise enough at least to bountifully supply your own family with a variety of vegetables, for if we study it a little from the scientific side of the question, we see they are necessary for the health of mankind. There is the greatest economy in fostering good health, a blessing we hardly appreciate until we lose it.

Shall I spend any time on the meat we eat? I hardly think it necessary, for the farmer is generally well supplied with his own raising of pork, beef, mutton and fowls, and owing to his having so much open air exercise he can easily stand the use of more meat than his city brothers and sisters.

But is it not a fact that too many farmers do not plan to furnish their own tables with meat of their own production? Too much of the year they buy meat paying from three to five times as much per pound as they sell for? It would be well for many to ponder upon this question of economy.

We all know the importance of fruit. Some may deem it a luxury but science teaches us that there is nothing better for us than ripe fruit, for our systems need the acids and other properties that it contains. The persons are few that will refuse almost any kind of luscious, ripe fruit. How many a busy woman might lighten the burden of the day if she had a nice dish of fresh fruit for her table, instead of making pies, pudding or something for dessert. Perhaps the fruit would be much better for the stomachs concerned.

Nor would I neglect to say a word in the economy of having flowers, even if the spot be ever so small in which they grow. The hearts are very few that do not care for flowers even if they do deny caring for them. Have a bouquet in the sitting room or if possible have some on your dining table; the beauty and fragrance will cheer and rest the crossdest and most tired of persons. Let the children have part if not all care of the flowers. It will help develop the pure and beautiful in their lives.

Mothers and wives, do we not know (especially since the last few years experience of hard times when there has been such poor economy practiced in our national affairs) what it is to clothe and sew for our families and how to economize? The prudent mother does not throw into the rag-bag the dresses and other garments when they are worn in places or out-grown. No, they can be made over, turned wrong side out perhaps and last quite as long as at first. Then perhaps there will be pieces left that can be used in patchwork. But I hear some one say, "I do not believe in patchwork; that is not economy." I do not agree with you. We that were little girls twenty-five or more years ago learned to sew on patchwork. Perhaps our mothers told us we could have all the quilts we pieced. They were quilted now and then and laid away, and did it not save time and expense when there came to be a wedding in that home? And I dare say that bride, yes, and the groom too, was proud of the quilts she pieced when a little girl. Did it not teach her to be industrious and thrifty? I wonder how many mothers when they put their little boys in pants buy a pair of little suspenders and let them wear them, instead of buttoning them to waists, and have the trial of everlastingly sewing on buttons and mending button holes. Do not wait until your boys grow up and wear long pants. Economize your time and patience.

Is there any thing else beside what we eat and what we wear that needs our time and attention? Yes, the atmosphere of our homes, the characters our boys and girls are forming are the greatest questions of economy. It is part of our life work and the part that needs with God's help the greatest thought, patience and economy to train our children into the noble men and women we would have them.

Are we careful from the time they are little tots to teach them that they can do this little errand; save mamma or papa a few steps here or there and as they grow increase their little duties and usefulness. Show them that it is a pleasure and a privilege for them to help, and do not forget to appreciate and give them the praise that is their due. Well deserved praise encourages anyone. We older ones can do without it, but do not starve this side of your children's natures. The character, the life, the soul, is the part that lasts forever. Are we using the most beautiful things in our homes and the pleasantest rooms? Are we getting the best books, pictures and music, and inviting the right companions for our children to associate with? It is the poorest kind of economy to neglect any one of these. If our children can not find entertainment at home they will go where they can find it and it is pretty sure to follow that they will find that amusement that will keep dragging them lower and lower.

It is usually seeking for amusement that our boys learn to smoke and drink. At first it is very offensive and makes them sick, but that must be overcome or they will never be a man! You are all familiar with the statistics of the use of liquor and tobacco, of the millions of dollars worse than wasted, and the thousands of souls that are destroyed by them each year.

It is the mother on whom rests the responsibility whether this pure atmosphere surrounds her home or not. In most cases the mother conducts a university, a clothing establishment, a restaurant, a laundry and a library. She is police and health officer of her residence, also the banker in many cases, holding all of the offices of president, cashier, teller and discount clerk, and often is expected to make five dollars do where seven is needed.

Then comes a panic in which the mother suffers the most. Ah, husbands, sons and daughters are you practicing the best economy you know of to lighten the burden and cares of this important factor in the home? If not, commence now, for you may realize when too late wherein lies the greatest blessing of home economy.

DOMESTIC ECONOMY.

By Mrs. C. E. Stockwell, Belvidere, Ill. Read before the Boone County Farmers' Institute.

Economy, we are told, is the art of being frugal. "Domestic economy" is so wide in latitude that it must involve all of the ordering of the household and to confine it to the mere expenditure of money would be to narrow its sphere and render us incapable of applying the principle to conditions which demand our everyday attention. Farm life in its routine is largely the same, no matter where you find it. Slipshod, unmethodical and unremunerative as it often is the duties are the same as where the opposite conditions prevail. The difference in results being traceable to the difference in methods used in performing. This is especially true of that end of the farm, the household. And I want my treatment of this subject to awaken responsive chords here and pleasant results hereafter.

As I see it, domestic economy includes three great principles—outlay, cultivation and results. The first contradicts not the subject for the worst type of economy is seen in the chronic tightening of the purse strings, for as it usually is the case where money is locked up and an embargo is placed upon the better principles of the man he degenerates into most anything else than a desirable adjunct to the fireside.

The capital invested in the home, however humble, is of no mean proportions and the strictest economy is imperative to render intact that capital. Inventory it and see how true the assertion. Health, patience, temper, industry and economy are some of the items which make up this capital. I may not make this clear but I want to, for the acquisition of money comes only in the preservation of these cardinal principles of the home. Take the first three mentioned, health, patience and temper and we see at once the necessity of strict economy in order to perpetuate and keep them unimpaired through the almost paralyzing changes of life on the farm.

The first pair were placed in the divine art of husbandry and it would seem as though God gathered around its great features to perfect health, strengthening influences to pastimes, and restraining forces, even soft in their touch, that would make temper a servant and not a master. Still degeneration has taken place, and we find in too many homes the wife and mother but a shadow of the beautiful girl of a few years ago. Sweetness of disposition, mildness of temper, having given place to an acrid, howling waste, where nothing lovely grows, and where the greater the distance, the greater the enchantment. You recognize the picture, and these unsightly daubs should be avoided upon household life hereafter. How? Practice domestic economy. In what respect? My rules shall be simple and I trust to the point.

Common honesty in the division of labor on a farm. Stand up ye lords of creation, ye masters on the farm and look at your wives and daughters a little while. Perhaps we may find a lesson in economy not on the bills. All hours.

on the farm are long, but it makes me quiver when I think of the long hours used in household work. Some work is drudgery, some is not, and it is the drudgery of household work that has covered so many homes as with a pall of darkness.

You men have economized in your health, your time, your labor, your temper, your patience, by securing the most approved forms of machinery, and you do not drag yourself into the house at night as weary as you did twenty-five or forty years ago. You are remarkably well preserved, pleasant country gentlemen—with all the appearances of being well kept and well fed. A smile for your neighbor and an elasticity of patience quite remarkable. You ride when you plow. We wash dishes in the same old way.

You need not soil your boots when you cultivate your corn for I see the seat where you are ensconced, bobbing serenely up and down, while the awning above your head keeps the scorching rays of the sun at bay. We are in the meantime down on our hands and knees scrubbing the floor or darning and mending or doing a thousand other things as our mothers did. Now I am not unreasonable, for I appreciate the fact that much of our work lies beyond the range of modern invention. You can simplify our work. You can make our homes handy—economize our steps—you can make us feel we are not servants—slaves or drudges, by royal helpers. You can sooth our patience with words of sympathy, and keep the roses in our cheeks with the fires of pride and love capable of flashing from your eyes. Will you do it?

Remember what we have invested in order to enlarge that capital and make our homes successful. The tenderest, holiest passions, the sublimest feelings of love and devotion, have all been invested, and we protest against such reckless expenditure of these things as will make us bankrupt and paupers, ere our life has half been spent.

Unanimity of action, plans tending to a common purpose, a line of work whose every movement counts for something definite, something finished, for a perfect representation of domestic economy, and to this end, help we want, help we must have, help we will have, or abandon the pursuit. But one thing more and I close this paper. The well ordering of the household is the better half of domestic economy. "Order is heaven's first law," and I love to see it practiced.

I would not have the kind that is stiff and unbending and gives one a feeling of being constantly in a straight jacket.

Monday for washing, Tuesday, Thursday and Saturdays for baking, Wednesday for ironing and Friday for mending, with the etceteras of scrubbing, sweeping, etc., etc., thrown in makes us machines and I don't like it. I would have that order that adjusts itself to circumstances, yet order, nevertheless, and such orders as will make our homes beautiful, though plain, attractive, though shorn of fashion's gifts, and so peaceful, when from the fields you come wearied and worn, you feel at once the soothing influences of that home that will cause such melody in your heart as will find voice in those beautiful words: "Mid pleasures and places though we may roam, be it ever so humble, there's no place like home."

THE FARMER'S LIFE.

By E. C. McDowell, Sidell, Ill. Read at the Vermilion County Farmers' Institute.

In considering the many vocations of life, we can truly say there is none more independent, more self-sustaining or more essential, to the livelihood of man, than the diligence and sedulousness of the farmer. For in all the wide fields of labor there is nothing that affords more real pleasure, more freedom in every particular, or brings man in closer association with the beauties of nature, than does the great and glorious process of farming. No one has a better opportunity of witnessing the wonderful workings of God, for every day brings him in full view of them. He is made familiar with the development of the young plant and its maturity. Then what thought more beauti-

ful can be cherished by the mind of man as he views his fields of ripened grain than the magic of these words, "This is my own native land." Farming in the true meaning of the word implies a great deal, for, as in other business pursuits, it requires diligent labor, good management and the means of knowing how to economize, if we would be successful. Man, in dealing with the land, is called to be a co-worker with the infinite mind; this is the foundation of the nobleness of the farmer's office. The air is given us; we can not change its current, but the soil we can make our own.

In the management of the soil the Creator takes us into partnership and on our loyalty within the bounds of our trust the progress of society depends, and in this trust it is seen that agriculture requires a great amount of knowledge, for with each year comes to us some new idea of how we should sow, cultivate or reap certain kinds of grain, or what changes should be made that the soil may be enriched. Almost every day brings with it something that interests the stock raiser or farmer. No sensible man ever contended that book knowledge alone would make a good farmer; he must acquire the practical part, but a knowledge of principles is the foundation of correct practice, for practice flows from principles.

In agriculture as in other methods of business life, the great want of farmers is more information, and there is no class of people more anxious to obtain instruction in relation to his business. Every human being has duties to perform and therefore has need of cultivating the capacity for doing them. The man who knows how to make the most profit with the least amount of labor and capital, who understands how to make the most of his land without impoverishing it, but rather continually improving it, is truly scientific.

Every farmer should be systematic in his improvements. He should use good judgment in laying out his farm, so as to admit ready access to each field. Provide good fences and necessary gates, then valuable time will not be lost in driving out intruding animals, nor crops lost by their depredations. Furnish good farm buildings to secure properly the crops and also to afford a good shelter for stock in cold and stormy weather. Select the best animals and best farming implements at reasonable prices. How many farmers are to be found who can plead "not guilty" to errors such as allowing thistles, elders, docks, rag-weeds, etc., to grow along fences; to allow boards to become knocked off of fences and barns, and the hinges of gates to become so deranged as to cause difficulty in opening and closing them, so they admit pigs to the dooryard to root up the grass and help themselves to swill at the kitchen door; to scatter implements, such as plows, harrows, rollers, etc., about the barnyard or along the sides of the road, exposed to all weather, and to throw rubbish, brush and similar articles into the public road. These are but few of the many acts of carelessness practiced by our negligent farmers. The farm should be so managed as to pay for all labor bestowed upon it. Improvements that do not pay ought, as a rule, to be discarded, and in order to know how his business stands, every farmer should keep an exact account to be able to know at the end of the year of his losses and gains.

To be successful you must be accurate, and that you can not be without an account book.

Every man should so contrive as to live within his means. This practice is of the very essence of honesty, for if a man does not manage honestly to live within his own means, he must necessarily be living dishonestly upon the means of somebody else. We don't like economy when it comes to rags and starvation; we have no sympathy with the man who should hitch himself to a fence post and stand still while the rest of the world moves on.

It's no man's duty to deny himself every amusement, every recreation and every comfort that he may get rich. No, such should not be any one's mode of living, but rather there should exist a love for social amusements and a regard for generous actions.

We would not forget to mention the farmer's home, for therein should be found all the necessities and many of the luxuries which our modern city homes contain. Indeed, we can truly say, that the farmer's home has many advantages over that of the city. There is no spot in all the world more

peaceful and happy than the ideal country home. It is free from all bustle and stir of the busy city, and one is not compelled to breathe the smoky air which pervades therein; but is free from the city's dust and heat.

The farmer has many privileges to be appreciated. He rises early, and as he goes forth doing his regular routine of morning chores, he is invigorated, especially in the springtime, by the balmy air, which is laden with the fragrance from the orchard blossoms, and listens to the delightful echos of the song birds.

When he returns from the labors of the day he finds much pleasure and true enjoyment in the quiet and comfortable home, which is well provided for, not only in the substantials of life, but in literary and musical supplies. In his library should be found the works of our best authors; his reading-table should be well supplied with the standard magazines, journals, religious literature and daily papers, for there is no greater consolation in life than reading.

There is no reason why the farmer should not be intelligent as well as his professional brother, if he will avail himself of opportunities afforded. We may say, what shall we read?

Read good newspapers, for the newspaper is the link which connects each individual with the life of mankind. Next to literature comes music, which is not only an accomplishment, but the means of making home attractive. No home should be without some amusements in the way of music, social games or some means of recreation.

In conclusion, it may well be said to young men, that in choosing an occupation there is none that for health and substantial wealth, for rare opportunities, for self-improvement, for long life and real independence, which excels farming.

EDUCATIONAL DEPARTMENT.

RURAL SCHOOLS.

By Amos D. Curran, Bristol, Ill. Read before the Kendall County Farmers' Institute.

The holding of a Farmers' Institute is an event of great importance to the farming and social interests of Kendall county. It is interesting to note that among the many good things on the programme President Havenhill and Dr. McClelland have provided a place for the schools. This is well. There is no interest of more importance than our educational interests. I undertake to say that the school, next to the church, is the most useful and the best institution that any community can have. Why? Because in the schools the children are educated to be good citizens. The school that does not train the children in character building and the development of moral and intellectual power is not carrying out the real purpose of our public school system. Our schools must develop the intellect in the children. We must not forget that intelligence on the part of the people is of the first importance in a free government, for the people rule and they need to be educated for their own protection and safety.

The schools must give training in moral power. A well managed school is always conducive to a sound morality. In this world there is just one thing that has absolute worth and that thing is character in boys and girls and in men and women. The teacher is the most important factor in bringing out moral training in the schools. I am glad to say that moral character of the mass of teachers is high, and it is encouraging to find that the teachers of the State and county, when compared with the general mass of citizens, stand high in the moral scale. I may safely say that our teachers are among the very best people we have.

Ex-State Superintendent Edwards says: "The standard of moral character set up for the teacher, both by his own fellow workers and by the community at large is high. This is a thing of which the teachers should feel proud. It ought to be a matter of rejoicing that their profession is thus honored of men."

It is of the utmost importance that the teacher's character and habits are above reproach, since he is an example to all his pupils. It goes without saying that this example should be such in all particulars that the pupils may safely follow it. As a rule they will feel themselves safe in doing whatever the teacher does.

Another service which the school should render the State is the teaching of patriotism. It is important that lessons of patriotism be taught to the children. They should learn more fully the worth of the land in which they live, and the cost of freedom and the free institutions that they enjoy. Let us see to it then that they are trained in the principles of true love of country; that they recite poems and declaim speeches which set forth the principles of our government. Let them learn in history and biography what the fathers of the Republic have said and done. They should be taught to love and revere the old flag—the symbol of our country's greatness. It should remind them of the sacrifices and glories of the Revolutionary War, and remind them of the fact that in the greatest civil contest ever waged on earth this nation came out victor. Let us see to it then that intellectual, moral and patriotic training be emphasized more and more in all our schools.

It is encouraging to know that our own schools are in a prosperous condition and are growing stronger and better every year. And it is in no spirit of boasting that I indulge when I say that the schools, both graded and ungraded, in Kendall county, when compared with the schools of other counties in the State, measure up with the best of them. But we ought to be unceasing in our efforts to improve them more and more, and I wish on this occasion to speak of a few things which will benefit them and increase their usefulness.

The first thing to which I invite your attention is in regard to buildings and grounds. I am glad to say that many desirable improvements have been made within the last few years, and the interest in the rural schools is growing, and is manifested in the remodeling and repairing school houses, the building of new ones and the better furnishing of both old and new. In many instances the rooms have been neatly papered and painted and put in first-class condition. But there is still room for a great improvement in many of the districts. I would urge the necessity of keeping the schoolhouse and grounds in as neat, comfortable and attractive position as possible. A well kept school house and grounds have in themselves a great educative value. There is no question but that pleasant surroundings are helps to good scholarship. The mind can not do its best work unless the body is comfortable.

Ex-State Superintendent Raab says: "The care for the health and comfort of the children is of equal importance to their proper instruction. That these matters have an influence also on the morals of the children makes it more necessary that proper measures may be devised how health, cleanliness and comfort may be secured. Pure air, comfortable rooms and furniture, good light and beautiful surroundings tend to educate the young as much as high scholarship of the teacher, or even more."

In this connection there is another matter of which I would rather not speak, but I feel that its importance warrants the calling of your attention to it, since it concerns the welfare of the children morally and physically. The condition of the country school outbuildings is, in many cases, bad, and much that is repugnant to the feelings and detrimental to the health and morals of the children exists. School directors ought always before the opening of each term carefully inspect the school house and outbuildings. These should be well cleaned and all marking and writing erased. The door should be furnished with a good lock and locked each evening. Double outbuildings are very demoralizing to children. There should always be two buildings, located in opposite corners of the grounds. Poorly arranged and ill kept buildings

are a source of great evils in our schools. If the children have to spend the formative period of their lives amidst cheerless and immoral surroundings we can hardly look for them to come forth morally pure or intellectually strong.

I believe that the extent of these bad influences is not appreciated by the parents generally, but they are there, and silently, yet powerfully, exerting a harmful influence in the lives of the children. I think that school directors will as a rule make needed improvements if their attention is properly called to the matter by the teachers, and they are assured that the pupils will work with the teacher to care for the school property after it has been put in order.

It is proper for you to ask, "What means have been used by your county superintendent to improve the condition of things?" I have sent circulars to school boards, written for papers and talked with directors and teachers calling attention to these matters, and I have been rewarded by finding a great improvement in a goodly number of districts. But there remains much to be done. I shall continue to work for the betterment of the schools along all lines, and I hope the time is not far off when every district in the county shall have the pleasantest and neatest properties in the whole community.

Granted that we have the proper equipment so far as good buildings and furnishings are concerned, we must not forget that the first essential for a successful school is a good teacher, and let it not be forgotten that a poor teacher is dear at any price, and that a good teacher is cheap at a high salary. The best organized and best taught schools in Kendall county are the schools that stand for good teachers and continue the same teacher through the whole year, and I am glad to add that this policy is rapidly gaining ground in the rural schools, where it is so much needed. In many of our schools the teacher is employed for the year, and is retained for several years if her work proves satisfactory. The best school economy requires this. Schools which have a new teacher every term or two do not make a desirable progress. I should advise that you select your teachers early for the whole year. Be sure to get a good one and pay a liberal salary. The school should begin the first of September and continue eight or nine months with as little vacation as possible—say holiday week and a few days at the close of the winter term. School boards would be greatly helped in securing good teachers by consulting with the county superintendent.

It will not be out of place to say that punctuality and regularity of school attendance are to be classed among the moral and helpful agencies of a rural school education. An important factor in bringing this about are good roads. The result of these would be an increase in attendance and regularity. Much valuable time and many school days are lost to the pupils in each term simply because of bad roads. But I am sorry that I have to say that in no small number of rural districts some pupils do not attend very regularly even when the roads are good. There is no greater stumbling block in the way of the pupil's progress than irregular attendance at school. Unless the children are regular and constant in attendance the best teacher can do but little for them. The school lessons are like the links of a chain, and if one is missing the connection is broken. Today's lesson may be the key for the lesson of tomorrow, and it is essential that the child has it. Pupils who are frequently absent lose interest, fall behind their classes, become discouraged and exert a disheartening influence upon the whole school, besides annoying the teacher and causing her to occupy extra time that belongs to others. Some parents, I fear, do not appreciate the importance of keeping their children in school every school day. The home influence rightly directed will be of the greatest benefit to the school. It is the duty of the home to see that the children are not allowed to be absent from school, except in cases of extreme necessity. Parents may greatly help and strengthen the teachers by coöperating heartily with all plans concerning school work. The teachers need your best sympathy and support. Stand by them in word and deed and your schools will be the better, and your children will receive ten-fold more benefit. Every home ought to be—and many of them are—a direct and powerful help to the teacher and the school. Children should be taught to regard the teacher as their best and most helpful friend, and to look upon school and its duties as above everything else for the time being; to feel that nothing should come between them and these duties. If children are allowed to neglect school for

trifling matters they will neglect business for matters equally trifling when they become men and women. So we see there is a principle involved here that will tell upon the welfare of the children in the years to come.

Let us urge the necessity of strengthening and building up the home school. It seems to me it is a mistake to send intermediate and grammar grade pupils to the village schools. A good strong school should be maintained in every rural district. A good country school is the best place for boys and girls until they are ready for the high school, and then I should advise, by all means, that they take the high school course. We have a fine course of study for the rural schools, and pupils who take this course and pass a satisfactory examination receive a county diploma, which admits them to any high school in the county. A goodly number have finished this course and entered the high schools of Plano, Yorkville, Oswego and Aurora, and I am informed that these pupils are among the brightest and the best of the high school students.

The country schools should be so good that none need go out of his home district to get a good knowledge of all the common branches, including physiology, algebra and a taste for reading history and the best American and English literature. The child's school work should fit him better for his home occupation, and that is one reason why we are advocating nature study.

We are trying to help the farmer, and we begin at the most teachable point—the child. The district school can not teach agriculture any more than it can teach law or engineering, but can interest the children in nature and rural problems and thereby fasten their sympathies to the country.

Permit me to call attention briefly to school libraries. There is nothing which will benefit the children more than a well selected library of books suitable for all grades in the school. It is of the utmost importance that we establish in the pupils habits of reading the best books. This habit will insure them against the evil influence of dime novels and other trashy reading. Every good book has an elevating tone, ennobling thoughts, a definite purpose, and will cause every child who reads it to become better in heart and in life. Children need much more in the line of reading than is found in a series of four or five school readers. This reading is of little consequence unless supplemented by the best literature. It is not expected that districts will purchase an extensive library all in one year, but a small sum expended annually for books would go a great way in bringing about a good purpose. School directors have the right to use any surplus school fund for the purchase of libraries. I would recommend that school boards appropriate \$5 each year for the purchase of library books. Under this arrangement your school would, in a few years, be abundantly supplied with good reading for the children.

In some schools an evening entertainment is given and a small admission fee is charged, with the understanding that the proceeds are to be used for the purchase of books. But the popular plan has been in this county to hold a "sociable" at some commodious house in the district and have a "basket or box supper." At these gatherings \$10 to \$15 are easily realized.

This sum expended in the purchase of suitable books, say those of the Illinois Pupils' Reading Circle, makes a very good beginning for a school library. In this way a goodly number of libraries have been placed in the schools of Kendall county. It has been my privilege to note how eagerly the boys and girls read these books. The children are fairly hungry for good reading. I have seen, too, how much value these books are to them in the study of geography, history, the sciences, etc. This reading greatly helps along all lines of school work. Boys and girls in the rural schools are anxious to learn, but a great disadvantage under which they labor is that books suitable to their age have not been within their reach. Let us provide these books. It is an important question, and one that has a weighty bearing on the home as well as the school. Lessons gathered from good, wholesome reading will influence for good the lives of thousands of school children who come under our care. It is the testimony of leading teachers, that greater benefit comes through the establishment of school libraries, when we reckon the actual cost, than from any other source of expenditures for our schools.

School apparatus: It is hardly necessary to say that every school should have a good dictionary; Webster's International is recommended. For teaching reading a set of reading charts are helpful, and for giving instruction in geography and history a globe, a map of the county, a map of Illinois, a map of the United States, and a map of the hemispheres are desirable, and will add greatly to the value of the teaching. Supplementary reading should also be provided.

Good blackboards are indispensable; real slate is the best and cheapest in the end. It can be bought for 12½ cents a square foot.

Agents for so-called school apparatus are abroad in the land. Generally the goods they sell are not worth half the price asked for them. It is always safest and best to purchase from the regular dealers. It will be safe for school directors to take the advice of the county superintendents and teachers in regard to this matter, rather than be influenced by the talk of agents, who pocket at least half the money paid for their wares. The money put into worthless apparatus would place slate blackboards, a good set of maps and a splendid library in every school in the county.

Another matter of vital importance is the water supply for the school children. It is absolutely necessary that every school be provided with good, wholesome water, and this provision can be met only by sinking a good drive well in every school yard. It is hoped that directors will be led to see this necessity and to meet it without delay.

It may not be out of place to speak briefly of Arbor Day in the schools. The setting apart a certain day in the spring for tree planting has become quite general in Illinois. The benefits derived from trees in their shade, shelter, and their influence in purifying the air and tempering the extreme heat of summer are too well known to need comment. On Arbor Day above all others the children in our schools should be educated to take care of the material prosperity of our country and to foster the growth of trees. It has been my privilege each year to recommend that schools observe the day, and in many instances this has been done and school grounds been made attractive and beautiful, and the comfort, health and enjoyment of the pupils have been greatly increased. It is hoped that school boards and patrons generally will coöperate with teachers and pupils in the planting of trees on the school premises and along the highways. It is now generally accepted that trees nurture springs and streams, increase and equalize rainfall in their vicinity, and prevent large quantities of earth from being washed down hillsides. Surely we have abundant reasons for planting trees and for emphasizing Arbor Day, and for its observance in all our schools. "There is not a spot on earth that may not be made more beautiful by the help of trees."

In conclusion, let me say: He who is now president of the United States gave expression to a great truth when he said, "This nation, if it would continue to lead in the race of progress and liberty, must do it through the intelligence and conscience of the people." The purpose of the school is to educate the boys and girls to be citizens; to train them to think for themselves; to think right; to say and do the right thing at the right time. Baron von Humboldt says, "Whatever we wish to put into the life of a nation, must be first introduced into the life of its schools."

We number in this country nearly 75,000,000 people, and are trying the experiment of self-government, the success of which depends on each governing himself, and this discipline must be learned in the home and in the school. Today we are the most powerful, the most wealthy, the most moral and intelligent of any among the Christian nations. How does all this come? It comes in the first place because we have a free government and free schools. How are these blessings to be made permanent? We must look to the public schools for the answer, for they are indeed the hope and the foundation of our national life. In all ages, and in every land where true progress has been made, the home and the school have been the foundation and education the capstone of society. He who said, "Let me write the songs, and I care not who makes the laws of my country," might have said with

greater force and significance, "Let me direct the minds of the children; and who will may rule the State." It is true that the teachers in our schools and the mothers in the homes hold in their hands the future of the nation.

We plead for the education of the masses who are represented in our schools by 16,000,000 of school children. These will be our lawmakers, upon their shoulders will rest the government, and they will determine the question of the future prosperity and stability of our country; and if it is to be governed by intelligent, moral, well disciplined, honest citizens, our first and all important duty is to educate the masses. The State has the right to demand this, and must do so for its protection and welfare. Let us see to it then that the boys and girls of today shall be so trained as to become the patriotic, wise, self-governing citizens of the twentieth century. And let it not be forgotten that "we must educate the people, for the people rule," and that education and freedom are the only sources of true greatness among any people; that a high standard of moral character, intelligence, patriotism, and the maintenance of our common schools are the forces which assure the future of our country, and which shall make this nation, by the blessing of God, for all time to come, "The land of the free and the home of the brave."

EDUCATED BRAINS FOR THE FARM.

By Harry McCormick, Normal, Ill. Read before the Macon County Farmers' Institute.

"I esteem it a great honor to have the privilege of addressing you. I recognize the fact, as all must who give the subject serious thought, that on agriculture rests all our civilization, all our wealth, all our arts and sciences and our culture and refinement. All that we have comes from the earth. The homes we live in, the food we eat, the fuel with which we prepare it, and the dishes on which it is served can be traced back to the earth. And so may the clothes we wear, the books we read, the pictures that hang on the walls, the carpets on our floors and the jewelry that adorns our person. Although learning, culture and refinement may sometimes be separated from agriculture, yet as the trees, however tall they may be, and however proudly they may wave their branches, have their roots deep down in the soil, and from it draw their nourishment; so with all other arts and occupations of men, they must be founded on the tilling of the soil, otherwise they languish and die. This is inevitable. It has always been so and will continue to be so until the end of time. If for any reason the earth refuses to produce, see how soon the wages of the coal miners are reduced, the railroads go into the hands of receivers, the shops and factories close, men are thrown out of employment and poverty and want sit at the fireside of the people.

"But what has education to do with this, you will ask. It is all the work of our hands and in no way depends upon schools. It is not the work of your hand, but rather the work of your brains directing your hands. While I recognize you as producers of wealth I must call your attention to the fact that you are also destroyers. When you commenced farming you found the soil so rich that all you had to do was to scratch a little. Some of you are still scratching. You have been taking from the soil and returning nothing and so I say you are destroyers. I will not discuss the rotation of crops or other farming subjects, but will call your attention to one article which is within the reach of all, and I believe that you will agree with me that the more you use of it the larger will be your crops and the less the expenses of their production, and the more the fertility of the soil will be preserved. I mean brains, educated brains, the best and cheapest article ever used on a farm. It has already worked wonders. It has placed the American farmer above and beyond the farmer of every other country, in respect to all that is worth living for. It has given him a home that is all that can be desired in comfort and convenience. It has papered the walls of his house, carpeted the floors and placed good books on the shelves. It has brought the live stock from out of the cold into barns and changed scrubs into sleek cattle. All of this is done without subjecting the farmer to additional expense and much more would have been done had it been used more freely. Possibly you ascribe this to

the fertility of your soil, your own intelligence and industry and the general atmosphere of American thrift. But other nations have soil as fertile and people work as hard and yet in order to keep body and soul together they have to practice a more rigid economy than you ever have dreamt of practicing.

"What has made the difference? I contend that the difference is due to the free public schools that dot the prairie and hillsides of America, and that have dotted them since the pilgrim fathers landed at Plymouth and the Dutch at New Amsterdam. The faithful men and women who labored in those unpretentious buildings were the ones who laid the foundation for your prosperity. In those little school houses you were born again, born into a new life of thoughtfulness and intelligent industry. Of all men the farmer should be most interested in the public school system, as it has done and is doing most for him. Not only should he watch over the so-called common schools in the rural district, but he should also be solicitous about the graded schools in the neighborhood towns. For although he may not send his children to them they aid him very materially by making his land more valuable."

Prof. McCormick then explained that a farm situated near a school town was more valuable than one which was so far away that children could not be sent. He then referred to the education of the children in the country and spoke especially of the boys, saying that they were the most abused class in America. Home is not always made a place of freedom, joyousness and companionship for the boys that it should be. He said that the parents should treat their boys kindly and advise with them and encourage them in any honest labor they choose to follow out, for if all the boys remained on the farm there would be no one to whom their produce could be sold. He said that corn, pork and fat cattle were good products, but that boys were a better product and that the farmers ought to be proud of the fact that they could furnish the nation with sound bodied and clear brained boys who annually crowd into the towns and cities and become mechanics, merchants, lawyers, doctors, etc. The speaker dwelt at length on the subject of the education of boys and of the necessity of their being brought up in the right manner.

In referring to the question of schools the professor said that he was aware that many schools were poor, but that the money expended on the schools brought back good interest. A poor teacher was expensive at any price and as the children formed their characters more from the teacher than they did from the book they studied it was important that the teacher be the proper kind of person. Mr. McCormick spoke for some time on the importance of having the proper person hold the office of county superintendent of schools and said that the best man in the county was none too good for that position. He said that schools enhanced the value of property and increased one's earning powers, but that it did more, it developed men and women. Wealth, power and distinction are valuable but men and women are more valuable than all of them. The speaker said that the greed for money was too strong and that not enough attention is paid to the moral side, but the coming education would change things. In concluding he said:

"Moral force will be considered more desirable than intellectual power, but the union of the two will be the true teacher's ideal. The children will leave the school to enter upon the work of life with high aims and honest purposes, which will save them from the allurements of vice and the lust of power, and enable them to walk safely in the integrity of their manhood and womanhood, the pride of their parents and saviours of humanity."

EDUCATION FOR THE FARMER.

By E. C. Griffith, Warren, Ill. Read before the Stephenson County Farmers' Institute.

Anything that I may have to say tonight, because of the hour, must necessarily be brief. You have been entertained and instructed by the program that has preceded and will be by what is to follow my remarks. I wish to congratulate this association of Stephenson county upon having such an efficient organization and such an enthusiastic company of officers. My adopted country is being upbraided by the press for the inactivity of the farmers' officers, while commendation alone is heard for the men you have placed in charge of this gathering.

This aggressive and progressive attitude of the farming communities betokens an educational awakening that is destined to advance our country.

The farmer has a great amount of information upon this subject of education. He is enrolled in one of the greatest universities in existence, for he is close to nature's heart. On every hand he becomes familiar with nature's wonderful alchemy which changes the insensible clod into the organic life of tree, leaf, blade and grain to give in turn nourishment and food to man.

The very name of life of the farmer is conducive to independence, to freedom of thought, and to search for truth. He is untrameled by the artificial demands of society, and is not biased by false standards of morality.

Some of the greatest names in history, famed in the world of letters are those of tillers of the soil. The great poet of Rome, Horace, whose writings are today studied by the youths of our colleges, had a little farm on the outskirts of Rome, and rode a mile from his farm to the ancient city. Coriolanus was called from following the plow to become the dictator of Rome, and to direct her destinies.

A large per cent of the promising young men and women today came from country homes and country towns, and when such youths have risen to positions of prominence they look back to the life on the farm as the time when they learned to listen to the great aspirations of their hearts and allowed their lives to be influenced by the subtle forces of nature. However, there is an education beyond this communing with nature. Too many of the rural population are making their lives full of drudgery; they begin to work before day-break and work steadily until long after sunset, and then only have time to catch a few hurried hours of sleep before beginning the task anew, until their condition resembles the giant of olden times who was engaged in continually rolling a stone up hill.

I believe it is this incessant toiling that is making farm life unpopular with the young men. The mind has a craving to be fed and acquaintance with the world is courted to supply the knowledge and information that their manner of living heretofore has ignored.

The struggle for supremacy today has become tremendous; the conflict is growing fiercer, so that sinew and brawn no longer count when unaided, but the farmer is compelled to call into use general information that he can decide how to plan his crops and when to sell; he needs to understand conditions governing the markets in Europe; to properly estimate the relative value of supply and demand. Thought put into work transforms toil into pleasure and recreation. Farmers should read the monthly magazines and general works of literature; the market reports are not sufficient to be a stimulus to thought and to open up the fields of imagination and conception. I like the idea of the community in which your secretary resides; where a debating society is maintained each week and topics of interest are discussed for the purpose of awakening thought.

I once was acquainted with a young man who entered an academy. He gave his age somewhat beyond that of the average young man just entering the academy, and said he had been employed on a farm. His teachers imagined he would have an unusually difficult task to master the lessons at his age, but he surprised them. The first lesson he recited correctly, the second lesson was also learned, and soon he was at the head of his classes. This occasioned such surprise on the part of his teachers that he was one day asked how it

was that he could so readily master his assigned lessons. He replied that when he hired out to a farmer he always had the agreement include the stipulation that he should have at his disposal one day each week, aside from Sunday, to use as he saw fit. That day he always spent in reading good books, and then the rest of the week as he plowed and worked about the farm he thought over the ideas he had read until his mind had become cultivated and he was prepared to reason out questions of difficulty. If one should take an hour and a half each evening, and then consider the substance of that thought the next day, he would be preparing his mind for use instead of neglecting the development of his powers.

And yet some seem to think that the farmer does not need an education. If that statement is accepted we must draw the conclusion that the farmer thinks mere physical work is the aim of life. Sometimes working people seem to think that professional men have no right to run a lawn mower in the front yard, but should content themselves with brain work and let the workingman do all the work. That would be radically wrong, and very soon we would have the nation divided into two classes—the brain part, which would be the educated citizen, and the muscle part—the day laborer. Follow that to a logical conclusion and we would soon have the working people reduced to mere servants for the educated, and half the people would earn their bread in the sweat of their brow and then they would earn the bread of the other half. The intellectually occupied need physical labor to relieve the mental strain and to develop the physical nature; the farmer needs intellectual nourishment to quicken the labors of his hands. Education is the great commoner, the leveler, for it makes us all alike. The schools of our land should receive the heartiest support of all classes of citizens, for they are benefiting mankind by the dissemination of knowledge. Education is the hope of the oppressed, and a nation is strong in proportion to the number of boys and girls, young men and young ladies, enrolled in schools. The little red school house should receive the support and encouragement of all classes of citizens for national permanence and for individual requirements. In the republic of Rome only the free men, the best citizens, were tillers of the soil and the serfs worked in the other fields of occupation. Today every person, regardless of occupation, needs a liberal education. Here I desire to make a plea for the daughters and sons of the farms. Fathers have told me that they have succeeded without schooling, and today they are the proud possessors of broad acres of the smiling prairie of Illinois. Their progeny is no less favored and must succeed without education. Such men fail to understand that the conditions have changed. Whereas their fathers could buy land here for \$1.50 an acre, and by breaking the virgin soil and chopping the massive trees, make his living each year magnificently, until by the natural advance in land he, today, finds himself a wealthy man. On the other hand the son today can not purchase land at less than its market value of \$70 to \$90 per acre, there is little chance of the advance in land making him rich, and he is forced to the conclusion that instead of relying exclusively upon the conditions of the soil he must cultivate his mind as well to keep pace with the times. A young man came from a distant city yesterday to Warren and said he had worked on a farm until his 24th birthday, but he began now to realize that he must have an education; it is imperative. Don't keep the son at home until next year because he can save the employing of a farm hand; and don't make a drudge of the daughter, but forego the purchase of the new carriage this year, and invest the money in an education for them.

We have in our museum at the academy a stone, one side of which is undressed; is rough in surface and dull in color, another surface is polished and remits the most pleasing shades of blue and green. The worth of the stone has been brought out and its beauty and surface has been increased. Such is the effect of an education upon a boy or girl.

An education should be sought not only for the practical advantages it gives in that it helps in the transaction of business; it opens up more of life, it augments the enjoyment and happiness of life and above all develops character.

These farming communities are the hope of the nation; men of prominence today were once farmer boys. We welcome the present as the time when a

large number are taking advantage of schools and colleges and are preparing themselves for broader citizenship, for greater happiness and wider usefulness.

MENTAL HYGIENE OF THE FARMER.

By Mrs. J. J. Nagle, Freeport, Ill. Read before the Stephenson County Farmers' Institute.

When first informed of the subject to be presented to you this afternoon, the thought of its breadth and the object to be dealt with was the first one to command my attention. This all-embracing question of the health of man, that trinal creation of God, the body, intellect and spirit. We can not conceive a perfectly healthy condition of the body without a corresponding condition of the mind, a purity of thought and aspiration, and the spiritual part of us also developed accordingly. Let the mind become tainted and impure, the course of the whole man is downward; and the physical and moral wreck is but a question of time.

The question of the sanitary condition of our surroundings, the purity of our food and drink, the cleanliness of our homes, are all dwelt upon in periodical and lecture, over and over again, until there remains no excuse for remissness in regard to any of these things on the part of men and women to secure physical health. But there are other foes to health, and now I shall no doubt say some things that are unpopular, but I am frank to say that although these assertions may provoke criticism I shall be satisfied if they do nothing more than arouse thought on these points of such vital import, for "there is nothing like standing on the vantage ground of right." So we shall deal more particularly with mental than with physical hygienics.

There are foes to health so insidious in their approach, equally dangerous to the physical life and growth, working through the mind. Let us then consider the healthfulness, if you please, or purity of the moral atmosphere surrounding our homes and consequently the community. We can perhaps but hint at some of the poisonous substances which, if allowed to enter its composition, will make its breath dangerous to our children. Then to secure a healthy moral atmosphere we will consider as a first requisite a pure home life that our children may not bear in their minds and bodies the stamp of impurity through heredity and home environment.

The second requisite will be to promote all around us the study of the word and works of God, and the improvement of our public schools so as to best insure ethical and intellectual development—that form of ethics taught by one almost 2,000 years ago. And right here let me say that there are many educators, the strength of whose mental caliber is not to be questioned, who fail to see the wisdom of outlawing the Bible from the school room. There is no need for sectarian comment and its wholesome truths help teacher and pupil. For many a child this is the only means of gaining a knowledge of divine truth, and to prevent the same in a Christian land is a reprehensible act. We have, through statistics, watched the educational progress of some states and do not find that anywhere has the ruling out of that book signaled a notable advancement.

The third requisite is to cultivate and hold the confidence of children on all questions relative to their well being. Advise as to companionship and indoctrinate them in the principles of Christian religion. In this respect Catholic parents are, on an average, far in advance of the Protestants, consequently comparatively few of them are carried away by strange doctrines.

The fourth requisite is wholesome literature.

The fifth requisite is care in choosing higher institutions of learning, associations in the professional, business and social world.

We may not have given these requisites in order with reference to their relative importance, nor even exactly in the order in which they may be called upon to meet our needs, but each demands our thought. There are certain laws of hygiene that control the moral atmosphere as surely as there are laws which, if observed, insure physical strength, and are just as needful to the insurance of a true manhood or womanhood, a noble citizenship, is a

pure moral atmosphere in which to develop. We know that, apart from the grace of God, we are just what we are because of our heredity and environment, and many of us have come to believe that the latter of the two, including training, wields the greater influence. Do we, as parents, fully appreciate the fact that the guardianship of our children is a serious matter? We can not be too watchful, and yet all restraint and vigilance must show tact and wisdom to be effectual. Many of you, representatives of the rural life of our county, and yours is a goodly heritage, you can be happy in the thought that although your labor sometimes taxes your physical strength, you escape even a knowledge of so much of the sin, shame and consequent suffering of the city. You are so situated as to have all things in your favor, if you use well your opportunities, for the development of the brain and brawn of our country. There is wholesome stimulus to be had in the country that is wanting in the cities. You would not change your places if you realize how many of the snares laid to entrap your children escape. You have the modern well equipped school room and the intelligent, painstaking, conscious teachers at an outlay of some money. So far you are on an equal with your fellow mortals in the city. You expect mental development and beyond a doubt some kinds of environment affords more chances than others for the central nervous system to develop. The city has many drawbacks, and at best it is cramped and evil influences are always so near at hand. It would be indeed hard to state wherein the country fails to provide the proper stimulus the growing central nervous system needs. The senses are more effectually appealed to than can be possible amid urban surroundings. Everything, from song of bird to the odor of flowers, is presented in its natural sitting.

With some people the idea prevails that a high degree of intelligence, wit, wisdom and culture are almost totally confined to the city. That depends. There is culture and culture, mental culture along lines of either truth or error, culture of the passions and appetites. To meet some of these ends the city of today is admirably fitted. All depends on the will, to be or to appear. As a public school teacher I would a thousand times rather enter an intelligent country community to take charge of the district school than to teach in any grade in the city. I do not know the condition of your rural schools, but I do know that they may be made to rival those of the cities. Then as a result you will find a decreasing tendency for young people hurrying from the country to seek a home in town, as delightful rural homes will be founded. So let me urge you to make your public schools one of the most absorbing topics of your thoughts.

As to our literature, "today, as always, one of the truest measures of popular purity is the character of what a people read." Although such heroic characters as Anthony Comstock have been doing much to prevent the production of impure literature, yet we continually find it a factor in the demoralization of youth. How important is the choice of the first books and periodicals which our children read, during that period when the taste for certain kinds of reading matter is formed and become a fixed force in governing the conduct in every relation in life. Some books pronounced standard or classic may be read with safety at thirty that would be absolutely harmful at fifteen, or at any time during the formative period. Many parents will foolishly allow their children to be turned loose, as it were, in a public library. Every book should be chosen only on the approval of one who is assured of its fitness. Our young people are absorbing an untold amount of useless and positively injurious trash by way of the public libraries. While there is at the present day many a truth made more effective in the garb of fiction than in any other way possible, you are a wise parent if you know the contents of a modern novel before your son or daughter does, if it is necessary that anyone should know.

The choice of periodicals in our home is important. Trashy story papers with suspicious advertisements are as pernicious in their effects as they can be. Some daily newspapers are of such character as to merit prohibition from descent homes. What use have our sons and daughters for the accounts of court proceedings against libertines and other unclean persons? Why admit such things to the home? And yet thousands of professedly good people do it.

In the education of our children let us see to it that both sexes are on a basis of perfect equality. The perfection of the home life of future generations depend upon it. This essential—the idea of the equality of both sexes—is one that is slowly alas, too slowly, developing.

Association with the outside world means danger on every side and consequently calls for vigilance. It is a serious matter to give your son or daughter into the care of others when the time has come for a choice of a trade, business or profession. The influence of the professional man over his student is great. The student, with few exceptions, assumes his habits, follows his line of thought and imitates his vices or virtues. In one profession alone that I think of now there is not one man that I know of who has at any time been a student of a certain individual whose character I can trust well enough to employ his services if needed. The safety of our homes demands that we inquire into the character of those to whom we intrust our sons and daughters, from the woman who plies the needle to the one who prescribes for our bodily ailments.

Mrs. Nagle closed her address with quotations from *The Voice* and the works of Dr. Horace Mann in relation to selecting colleges for young men and women.

CHILDREN ON THE FARM.

By Mrs. M. D. Morrison, West Peotone, Ill. Read before the Will County Farmers' Institute.

I have always had a love for children and a deep interest in them. There seems to be fundamental principles which apply to the right training of all children, but these principles I find entirely ignored by many parents.

One of the most important things is the training of the child to submission and obedience to proper authority. Without this any system of instruction is radically defective and nothing can make up for it.

There must be discipline and obedience, for if the child is allowed to hold in contempt the law of the parents and household, he may reasonably be expected to hold in the same contempt the laws of society, of the State and of his Creator. Obedience is the corner stone in the home training. But by obedience, I do not mean a brutal exercise of physical power for this would develop anger and stubbornness, but the exercise of reasonable methods. Webster says that obedience is not thwarting, breaking, scolding or subduing as many seem to imagine, but guiding, leading, drawing, directing. There is a great deal of training to obedience which is only repression. A practical educator gives this as his experience: "I know that many persons would think it wrong not to break down the child's will by main force, to come to battle with him and show him that he is the weaker vessel, but my conviction is that such struggles only tend to make his self-will more robust. If you can skillfully strive to delay the dispute for a few minutes and get his thoughts off the excitement of the contest, ten to one he will give in quite cheerfully; and this is far better for him than tears and punishment."

Love will suggest many methods for making obedience as easy as possible, but let no one fail to teach the child that obedience must be complete. But the child should not grow up feeling that obedience is due only to one parent, that authority resides only in one—that father must be obeyed, while mother can be twisted as they choose; or that mother rules them while father is a figurehead or an animated purse. They must not find one parent concealing their acts from the other, or one parent permitting what the other prohibits.

A keen observer of children gives it as his opinion that "the first six months of a child's life shapes him more than any subsequent six months, and his treatment in that period has a vast deal to do with the future. In the first two years of his life, a child learns more than all the rest of his life put together; more than is indispensable to him in life; more than goes to decide his place among others. Commonly, a child's character and future are mainly

shaped or directed for all time, before he has passed seven years of age." This is not a modern idea in child training for we find that Solomon says: "Train up a child in the way he should go and when he is old he will not depart from it."

Parental influence is one of the most important elements in the formation of the child's character. How efficient and lasting such an influence may be is thus attested by a prison chaplain of wide experience; he says: "The last thing forgotten in all the recklessness of dissolute profligacy, is the prayer or hymn taught by a mother's lips or uttered at a father's knee and when there seems to have been any pains bestowed even by one parent to train up a child aright, there is in general more than ordinary ground for hope."

"Children," says Joubert, "have more need of models than of critics." Nothing can save like high ideals. That is what God sent us Christ for. Children are born with a passion for imitation and copy not only your actions and words but your very spirit long before they are six years old. A little child was once heard to pray, "O Lord, make us very stylish." Do you not see the spirit of that home in spite of the religious teaching?

An able essayist has said: "The spirit which his parents display toward one another, or toward their servants, or toward those with whom they are at least on their guard, is a far more impressive pattern to the child than the model spirit described by the parent on a Sunday afternoon or bed time religious talk with the child. What the child is permitted to do at the table or away from it when the family is all by itself, is more likely to stand out in the child's conduct when visitors are present than the company manners which were enjoined on the child most faithfully and repeatedly while he was being washed and dressed for the occasion. Habits of thought, standards of conduct, rules of taste, purposes of life are given or promoted in the work of child shaping at home by example, rather than by precept, unconsciously more often than by design."

Let us teach our children truthfulness by our own example, by showing and inculcating principles of honor. Many times parents teach their children to tell falsehoods by doubting their words, by a severity which makes them cowards and by accepting any stranger's word against the child's statement. Let your child feel that you believe in him and trust his honor. Oh, that the mothers and fathers might realize what an opportunity they have when God gives them a little child and says: "Train this child for me." It would lead them to God in prayer and lead them to look into the ways of their own lives as never before.

Nervous and fussy mothers weary and irritate their children with their numerous cautions. The child ought not to feel that he is being watched all the time. My sympathy is with the boy who sent the cat back into the house, because, as he said, he could not have her hanging around all the time, it was bad enough to have God watching him all the time. While it is a good thing to have the child impressed with the truth that God is watching him, do not teach it until you have taught that they are loving eyes.

Said the mother of a large, well ordered family: "I never fret about little faults of manner, nor even about transient irritability in my children. Children, as they are growing up, go through many temporary conditions which if apparently unnoticed, pass away. In fact, there are little moral disturbances to be expected like whooping cough and measles in physical life, and if the general home atmosphere be wholesome and the trend right, I do not think it worth while to be too much distressed over occasional naughtiness."

Many parents antagonize their children with too many "Dont's" and prepare the way for a spirit of opposition and rebellion. Like the Kentucky mother who was going away to spend the day and before leaving carefully locked up everything but a bag of beans, which she hid under the bed with the instruction to the children to "not to be agoin' and gettin' 'em and a crammin' 'em up your nose." The result was that when she came home they were all crying with beans in their noses.

Judicious praise is a great help in child training. There is a difference between judicious praise and silly flattery. A writer has recently said: "Approval following success is of far greater efficacy" as a stimulus to further

efforts, than severity on failure. The little triumphs and successes of the young mind should never be indifferently passed over without a just token of and fitting praise from the parents' lips. The love of approbation is one of the strongest incentives to improvement and industry which the Creator has planted in the human mind. Praise, then, when merited, should never be withheld. It is the chief, indeed generally the only recompense for which children look, and it is a bitter and injudicious cruelty to deprive them of it. The approval and censure of its parents and teachers should be the guiding stars of a child's existence."

Another home educator makes these sensible suggestions: "Let the children learn by experience in the loving atmosphere of home without fear of harsh criticism or fault finding. Home is the place for experiment and failure as well as for success, for sympathy and encouragement quite as much as for discipline. Guide their unsteady feet but sometimes let them go alone even though they may fall. Then pick up the little stumblers but beware of blaming or laughing at their childish mistakes. A thoughtless laugh may rankle in the heart of a sensitive child for months, may never be wholly forgotten."

If a child is inclined to be cruel to birds or other animals, instead of talking to him so much about his cruelty, endeavor as you have opportunity to interest him in the many curious habits of animals, the building of their nests and homes, and the devotion of the mother to her young. Picture to him the life of constant fear and danger that the sea-animals live, never safe, always alert. Call his attention to the care of our Heavenly Father for their needs and safety. Tell him of their preparation for the winter, reminding him that no such preparation is needed for the domestic animals, as they have been entrusted to our care.

Mothers can help their children to overcome both cruelty and fear by showing them patiently and kindly that our domestic animals are neither to be feared or abused. A mother was standing near a farmer's wagon with her babe a year old in her arms. The farmer's old horse good naturedly put his nose out to the child. The child shrank back to his mother's neck. "Pretty horse," said his mother in a musical voice and taking the child's hand in her own she stroked the animal's face. "See his nice ears, see his nice eyes." Grown suddenly bold the child poked his finger at the horse's great dark eye, but the watchful mother seized his hand and said, "Softly, be kind to the horse. Poor horse, no, no, don't touch his eye." The child's next move was to tap the beast's nose as hard as he could. "Softly, gently; you must not whip the good horse, but pat him softly." The child learned now that there was to be neither fear nor abuse and crooning in a tender tone, he stroked the animal's face with his white dimpled hand.

It is not only the duty of parents to build up a good character in their children but also to stimulate and direct their intellectual life. I think fewer wives would complain of loneliness in the needful absence of their husbands and their own severance from society, if they set seriously about being the companions and teachers and friends of their children and making their children companions for themselves. A lover of children has said: "Children hunger perpetually for new ideas. They will learn with pleasure from the lips of their parents what they deem drudgery to study in books; and even if they have the misfortune to be deprived of many educational advantages, they will grow up intelligent if they enjoy in childhood the privilege of listening daily to the conversation of intelligent people. We sometimes see who are the life of every company they enter, dull, silent and uninteresting at home among their own children. If they have not mental activity and mental stores sufficient for both, let them first use what they have for their own household. A silent house is a dull place for young people, a place from which they will escape if they can. How much useful information on the other hand, is often given in pleasant family conversation, and what unconscious but excellent mental training in lively social argument. Cultivate to the utmost, all the graces of home conversation.

Washington Irving, in a description of one of his inimitable characters says: "It was the policy of the old gentleman to make his children feel that home was the happiest place in the world; and I value this delicious home feeling as one of the choicest gifts a parent can bestow."

Another writer has beautifully said: "It takes but little to give a child pleasure and the longest life is not long enough to banish the recollection. Remember the happiness of your own childhood and ask yourself what earth contains that could purchase from you the blessed memory of those golden days. Then store the children's mind with happy memories while you may. Soon, too soon, their childhood days will be past and your loved ones must go out into their several ways to meet their share of life's stern discipline. Happy will it be for them, if amid all their perplexing duties, disappointments, joys and sorrows, they may carry with them the cherished memory of a happy childhood. And happy will it be for you if in their young irrepressible years you have forged a chain of love to bind their young hearts to yours—a chain so strong that time can not rust, life can not sever, and death can only strengthen.

HYGIENE ON THE FARM.

By Dr. I. F. Harter. Read before the Henderson County Farmers' Institute.

Hygiene is health, a state in which all the functions of the several organs of our body are exerted with harmony and regularity. It is the opposite of disease, which consists in a change of function or structure of an organ, or of both.

Now, in order to confine ourselves to our subject, we must talk of health on the farm. It is not so important and essential to learn what health is, as to learn how to retain it when we are in the full enjoyment of it, or how to regain it when it is impaired, lessened or lost.

I will take for my text the familiar words "Cleanliness is next to Godliness." Cleanliness, pure air and pure water are the best known disinfectants and the best prophylactics. How essential it is to have pure air to breathe. A proper amount of it is demanded to aerate the blood by which the action of the stomach, lungs and heart are stimulated, by which digestion, absorption and assimilation are performed. A healthy action of these organs and pure blood will induce a healthy action of the secretory system, the liver, kidneys and lymphatics, by which the effete matter and worn out tissues are eliminated from our system. Therefore, in health, our bodies are continually undergoing metamorphosis. One set of organs are busy building up and maintaining the system; another set are busy carrying off the worn out, waste and unnecessary material.

The first important factor of hygiene on the farm is the selection of a farm in a salubrious region. If we select a farm for our home which is surrounded by bayous, sloughs and swamps containing stagnant water where malaria is constantly generated, we can not expect to enjoy the best of health. In a few months or years the color of health on the cheeks will be replaced by that of a pallid and swarthy appearance. The eyes will lose their brightness and lustre. Then first of all select a farm in a locality where there is good surface drainage and comparatively free from malaria. Build your house on that portion of your farm where you can obtain good surface and underground drainage and pure water. It is not only essential to have good surface drainage but good underground drainage for your cellars and out buildings.

The cause of many cases of sickness, such as ague, rheumatism, neuralgia and typho-malarial fever, has been traced to a lack of drainage and ventilation. Don't fail to ventilate your cellar and the space under your floors, or malaria may be produced by the pent-up decaying vegetable matter and you will have a case of fever, rheumatism or neuralgia. You will then ask your family physician, "Doctor, where is the cause of this sickness?" He may be too timid to tell you that you have a hot-bed of disease right under the floor of your pleasant home. In regard to building material, lumber is the healthiest. Brick and stone walls absorb and retain much more dampness than walls of lumber and plaster. When building, keep in mind the essential objects of light and ventilation. Have your sash hung with sash weights and keep an eye on your painter, see that he does not paint the upper sash so tight to the

stops that they will not move. In ventilating drop at least one sash from the top as the hot and vitiated air rises, and if there is not plenty of room between the bottom of the doors and thresholds and between the sash of other windows to admit pure, fresh air, raise a lower sash, thereby creating a gentle current and obtaining pure air.

On the subject of heating I must not consume much of your time, many farmers look more upon the economical than upon the healthful and pleasant side of this subject.

Out on the prairie farms a long way from timber the hard coal base burner has proven quite economical. The time has come when a hot air furnace apparatus can be obtained at quite a reasonable price. And if it is desired to heat several rooms, the furnace to consume soft coal or wood is about as economical or even cheaper than the base burner. By the way, don't forget to build a bath room while you are building. Remember my text: "Cleanliness is next to Godliness." And if the farmer boys after a long day's harrowing, planting or plowing will take a plunge into a bath with a good rubbing, their sleep will be more pleasant and refreshing, their dreams sweeter and they will save their mothers, sisters and hired girls much hard work at the wash tub and ironing table. If you conclude to heat your house with a hot air furnace it will not be much additional cost to have a small system of water pipes, and with a tank in the attic, a force pump in the cistern, and a coil of pipe over the fire pot of your furnace, you can have both cold and hot water in your bath room, kitchen and wash room; and I believe it would be in order here to suggest that you could also have a closet in the bath room for the children, invalids if any, and the women. The closet can be drained through sewer pipes to a cesspool a short distance from the house, and the cesspool can be drained with a separate pipe. These are conveniences which people in the cities enjoy. Farmers and their families can enjoy them with equal or less cost.

Build your barns and hog houses a good distance from the dwelling, and where you can secure good drainage. If you can not secure good surface drainage, put in a system of tile sewers. Tile can now be bought at a very reasonable price, and you will be more than repaid in good health and freedom from mud and filth. Keep your barns, cow yards and hog pens well cleaned up. Don't allow the manure to remain in a heap until all the ammonia, which it contains, has escaped in the atmosphere about your house and taken into your lungs instead of into the soil of your fields. I often wonder if farmers know how much more valuable as a fertilizer manure is before the ammonia has all escaped. By ammonia I mean the gas or smoke which you can see and smell arise from a well-rotted heap when you stir it up.

In regard to water, we will say that a greater number of solid substances are soluble in water than in any other liquid: Our own bodies are mostly composed of water. A man weighing 154 pounds contains 100 pounds of water—enough, if rightly arranged, to drown him. Hence, how important it is for us to be cautious in regard to our drinking water, and even the drinking water of our milk cows. Water should be free from color, taste or odor. It should be cool, bright and free from deposit. But water having all these characteristics may be more or less polluted by organic matter owing to close proximity of drains or sewers, or a duck or goose wallow. I have seen small dirty ponds or mud puddles near the well in the dooryard where flocks of geese or ducks would enjoy the long summer days. Hence, to prevent pollution of well water, the walls should be cemented towards the top in order that nothing can reach the interior except water that has been filtered through unpolluted ground for several feet below the surface. Impure water supplied to milk cows may generate disease of those using the milk. All impure or suspected water should be thoroughly boiled before being used to drink.

It is a popular belief that freezing purifies the water and that ice is free from disease germs. But experiment has proven that pure ice is only obtained from pure water. And ice has often conveyed the germs of typhoid and low forms of fever. Water is an absorbant of foul gases, and if an open vessel of water be left in an occupied apartment, especially a sick room, over

night, it will become foul from the absorption of the respired and perspired gases, and is, therefore, unfit for drinking, and should not be used even to wash the teeth or gargle the throat.

In regard to bathing we might mention and describe the several kinds of baths as the ancient Greek and Roman baths. They used steam, hot air, dry rubbing, hot, tepid and cold water, scraping with bronze instruments and anointing with oil and precious perfumes. The modern Russian and Turkish baths, sea baths, cold, tepid and hot water baths, but the most practical method on the farm is the sponge bath or full water bath. Physiologists claim that the proper time to take a full bath is immediately after rising in the morning. The body is then warm and can endure moderately cold water better than at any other time. It will stimulate the nerves and brace up the relaxed condition induced by the night's repose. If reaction will immediately set in, cold water is the most invigorating; if not, a tepid or hot bath will be best. If you have no bath tub, a basin of water and a large sponge or piece of flannel will answer a good substitute.

Before dressing the body should be rubbed with a coarse towel or flesh brush. In regard to the time for the farmer boys and men to take a bath, especially in the summer time, is before retiring. I make this suggestion more as a labor saving process, and feel confident that it will meet the approval of the ladies.

Clothing during the fall, winter and spring, in our changeable climate, should be such as to retain the heat of the body and exclude the external cold, dampness and wind. Woolens, especially for underclothing, are preferable; the meshes contain much air; the tissues of the fabrics absorb moisture slowly, therefore it is a poor conductor of heat and a better protector of the body of the wearer. Clothing in summer to keep the body cool should not absorb the heat of the sun and should permit the heat of the body to escape, hence cotton and linen are the ones to be used. Light colored clothing is not only cooler in summer, but warmer in winter.

In conclusion, I will take time to give only a few hints in case of accidents or poisoning. It would not be necessary to say anything about drowning if all would follow the advice of the kind and indulgent mother, who advised her boy to not go near the water until he knew how to swim. But, strange to say, farmer boys won't follow such advice. In case of drowning, loosen clothing about neck and chest, turn the patient face downward, open the mouth and draw out the tongue, cleanse the nostrils, then place him on his back, grasp his arms above the elbows, pull them up until they meet above the head in order to draw air into the lungs, then bring arms back by side to expel the air, and repeat fifteen times per minute.

For burns and scalds, cover with soda, white of eggs, olive or linseed oil.

For sunstroke, get patient in shade, apply ice cold water to head, mustard plaster or friction to spine.

For fire in clothing, if possible lie down, or keep head down so as not to inhale the flame, and wrap in woolens, carpets or rugs.

For poisons, induce vomiting by tickling throat with feather or finger, drinking hot water or strong mustard water. Acids as vinegar, or weak solution of acetic or citric acid, are antidotes of alkalies, as concentrated lye, potash, hartshorn, gold dust, etc. Alkalies, as soap suds, magnesia, are antidotes for the strong mineral acids, as muriatic, nitric, oxalic and sulphuric. For arsenic, rat poison or paris green use milk, eggs or oil. For opium, morphine and soothing syrups, strong coffee, hot bath, dash cold water in his face, keep patient moving and awake.

CHARACTER BUILDING IN OUR PUBLIC SCHOOLS.

By J. P. Browne, Plainfield, Ill. Read before the Will County Farmers' Institute.

I presume nothing can be more humiliating to a person than to be reminded of his own degeneracy. For that reason I feel in a somewhat humble frame of mind as I rise to address the farmers of Will county.

You will all readily appreciate the reason when I publicly confess that I used to be a farmer and now, alas, have degenerated into a school teacher. It is unnecessary to detail the reasons which led to this degeneracy. Suffice it to say that I am painfully aware the farmers lost nothing when I left their ranks. On the point as to whether the ranks of school teachers gained or not, I am also painfully aware that there might be conflicting opinions. Be that as it may it will hardly be termed egotism to say that I feel better qualified to speak on educational than on agricultural questions.

I have been asked to say something about character building in our public schools. It is an old saying and I think a true one, that character is what the individual really is, while reputation is what people think he is. To be sure what we really are is usually what people think we are, but it is not always so. Jesus Christ was crucified for much the same reason that Socrates was condemned to die. He was regarded as a standing menace to public morality, yet we now regard him as the greatest of the world's teachers. There character and reputation certainly did not agree.

Now then what can we do in our public schools to build up character in a boy? To answer the question intelligently it will be necessary to follow the Irish plan and ask another first: What forces are there in our schools potent to mould character? I think there are at least three that may be mentioned, the influence of the boy's associates, the influence of his teacher and lastly the influence of his studies.

I do not think it necessary for me to discuss the first of these, the subject is thread-bare and anything I could say on that topic would apply with equal force to a boys' or girls' associates anywhere. There is a wonderful difference in schools and localities, however. From my experience in schools, both district and graded, I can truthfully say that the moral atmosphere, in some cases clear and bracing, in others is absolutely vitiating and polluting.

Don't hold up your hands in holy horror and tell me that you know this isn't true in regard to your school or your boy or girl. I am making no statement in regard to any particular school or student, but from fourteen years experience in teaching in Illinois and Wisconsin. I venture this statement and stand ready to prove it. A large percentage of the average American school children from six to twelve years of age are possessed of knowledge which should not be theirs until many years later. Parents look well to your children and their associates while attending the public school.

The second influence which I mentioned was the boy's teacher, and now I am aware that I tread on delicate ground, for it is a personal matter. What I say may invite personal comparisons and you know Mrs. Partington says "comparisons is odorous." Nevertheless, no matter how far he may fall short of it, an individual may have an ideal and discuss it. I suppose there is in existence such a being as an ideal school teacher, although I have never been fortunate enough to make his acquaintance.

To ascertain truth and follow its logical teachings is the sum total of all true education. Truth is eternal, immutable. A principle true today was true "when the morning stars sang together." Truth is the "I am" of cosmogeny. Man's conception of truth may change, but truth from its very nature can not change. That the world moves is as true today as it was the day Gallileo denied it on the rack. That human slavery is wrong is a truth despite the fact that the Father of his Country owned slaves to the day of his death. That the Golden Rule expresses a stable principle in ethics is as true today as it was the day the Jews crucified its author.

What has this to do with a school teacher? Just this: To be a potent force he must be a truth. Let me come from generalities to specific statements. If the teacher is to be a helpful factor in moulding character his example must go with his precept; never has deceit a permanent influence for good. He must not teach to incredulous boys the awful and terrifying effects of tobacco on the human system then sneak around somewhere out of sight and smoke a cabbage leaf Havana. Woe to the teacher who, for policy's sake, teaches a Sunday school class. His minutest action in and out of school will be closely scrutinized at the bar of the public school and, unless consistent, the triumphant whoop of the school boy will proclaim him a whited sepulcher

Let him prove by text book and experiment the vitiating effect of alcohol on the various organs of the human body, drawing harrowing pictures of ulcerated stomachs, diseased lungs,, impaired circulatory apparatus, enfeebled intellects and drunkards' graves, ascribing all to the liquor habit as the great State of Illinois commands that he shall do, then let him follow the instructions to Timothy and take a "little for his stomach's sake" if he dare. No, to be a force in moulding character the example must go with the precept, he must shoot as he talks for the instant his word is at a discount, that instant his usefulness to the student is greatly impaired.

But if you have any of the milk of human kindness in your composition don't expect too much from a teacher, he is but mortal. The very nature of his business prevents his being angelic. I am presumptuous enough to venture two original statements in regard to the average teacher. He won't get rich and he won't get fat and any man so circumstanced, you must confess, is badly handicapped in the race for happiness. Like the law of gravitation this is true but hard to explain. Don't expect then that he be a perfect model although you have a right to demand that he be a good citizen. And he may be a good citizen, yea and a good teacher although his opinion and yours differ radically on points which you consider important.

The third influence which I mentioned is the studies which the student pursues. It would be inappropriate for me to go into a detailed analysis of the psychologic effects of the various studies in our common school courses. That the study of different branches develop different faculties is evident, as for instance science develops observation and causality; literature and history imagination; mathematics the reasoning powers, and so on.

As these faculties develop the character forms, their harmonious development will present the ideal character, therefore it seems logical to say that the more comprehensive the education, the broader and fairer minded the resulting individual. I am aware that there are still in existence people who say that nowadays children are apt to get too much education. that it gives them "high toned notions" which unfit them for the everyday duties of a laborious life. Away forever with such insufferable rot. Remember that ideal education consists in knowing truth and practicing its logical teachings.

Can truth and the teachings of truth ever degenerate an individual? Impossible, otherwise the universe is a chaotic paradox and its creator an illogical prestidigitator. Let the croaker croak and the ignoramus prate as he will, education is, and always has been, a power. I don't believe a man can get too much education and I know he can get too little. I have heard of men being spoiled by too much education but I have never seen such a thing and if there be such a being as an educated fool I shudder to think what kind of a fool he would have been if he had not been educated.

Whom do our latest immigration laws bar out of this country? The illiterates. Why? Because the nation recognizes that their presence is a standing menace to our civilization. They breed crime and vice and ignorance is the parent of both. They promote discord, not harmony, and harmony is the strength and support of all institutions, especially ours.

The world teems with force and material which can be transformed to force, and all can be made to obey the behest of the wizard man and minister to his necessities. But the coming brain must search for the key that will solve the apparent mystery. Our little world, our great sun, the mighty Sirius, the majestic Arctivrus sweep through their wondrous arcs for countless ages but at last the analytical mind of a Newton solves the laws which hold them in their courses and now the school boy can compute their times. A Morse directs the electric fluid through a thread of wire over mountains, through the abysses of ocean and the inhabitants of a sphere are in direct communication. The invisible vapor of water is harnessed and now the iron horse annihilates time and destroys space. An Edison and a belle experiment with magnetized wire and vibrating discs and now we talk into a hole in the wall while a man five hundred miles away hears and answers us. And more will yet be done, more truths will yet be discovered. And who will do this? Verily, not the ignoramus but the man whose body and mind are trained, disciplined and fed.

I have said that in obtaining an education the discovery and appropriation

of truth are the great ends to be accomplished. Allow me to illustrate. In attempting the solution of a problem in mathematics a certain principle is true which if successfully applied solves the problem. In studying the great realm embraced by Biology truths are to be discovered and mastered. Now a muscle and its functions, now a flower, its uses and beauties. Here a heart with its cunning apparatus, there a leaf or a bud. In studying geology, here are the rocks, the silent witnesses of the ages, inviting man to discover the truths locked in their remote depths. It almost seems as though the creator tossed the world from him a complex toy, then created man to color its subtle puzzles.

True character building in our public schools forms such a character and develops such a judgment that not only are the aforementioned truths discovered and mastered but the truth on any question, social, economic or otherwise is more easily discovered and fallacy exposed and rejected. But this is not always easy, for honest thinkers will honestly differ.

What do I mean? Just this. Two twos make four, the world is sure of it, but, alas, there are other things of which it is not so sure. W. J. Bryan is perfectly sure that the free coinage of silver would be the best policy for this government to adopt and pursue and he is an honorable man. William McKinley is equally sure that the gold standard is the thing for this great republic and that the free coinage of silver would be disastrous and he is an honorable man. So are they both honorable men. Why, I have even heard it intimated that there is a slight difference of opinion on this subject in the city of Joliet.

Now what is the truth on this great national question? Let me tell you. God knows, and he has not confided in any one just yet. But when the truth is discovered, if it has not already been, it will not be by the man who was rocked in the party cradle, reared on party pap, stuffed with party doctrines, and who finally developed into a most offensive partisan, but it will be the man who has been so educated and his character so moulded that he can divorce himself from party prejudice, if he has any, and look on both sides of any great question. Well is he then equipped to make the decision which is the true one and the clear apprehension of truth is his reward.

I believe in teaching children to look on both sides of all questions. We are too apt to gag their intellects, to put them in mental straight jackets. Do you know that nearly every child who finishes the study of United States history in our public schools, leaves those schools with a lasting grudge against England? Also with the firmly rooted idea that it is the God-given mission of us Americans to put an extra twist in the British lion's tail at every opportunity; that if Uncle Sam were but to concentrate his energies that right, tight little island could with pleasurable ease be blown into the minutest smithereens? "We've licked her twice," shouts the juvenile patriot, swinging his lusty young arms, "and it would be no trick to do it again."

I believe we could, but you will agree with me that is hardly the proper spirit to develop in any child. The mind is prejudiced at the very beginning, and man's estate fails to eradicate the early impression. Blow and bragado-cia take the place of careful investigation and honest patriotism. Students should be taught to investigate both sides of every historical question, and the judgment so trained that correct conclusions will be reached.

To illustrate still further from history: Take the story of our own civil war—is this a proper question to ask the student: "In your judgment, was the North entirely right and the South entirely wrong?"

Now, again I am treading on dangerous ground. Before me I doubt not are men who heard the hiss of the rebel bullet and the roar of the rebel cannon—who risked life, limb, all for what they deemed to be right. Is it an insult to these men to ask such a question in a public school? A thousand times, no, for by careful investigation, by hearing both sides of the great controversy, these men, I believe, can be triumphantly vindicated, and the principles for which they fought, bled, and too many died, can be shown to be radically and eternally right.

But do not stultify the child's intellect by commencing with a predetermined conclusion. If you do, what kind of a character are you helping to mould? That of an unthinking bigot. Friends, I am confident that the nineteenth century has little use for a bigot, and we are so near the twentieth that I am sure it will have still less.

This habit of independent thought can be, and I desire to say most emphatically, should be encouraged. It may lead to embarrassing conditions in a school room. Suppose I were teaching the subject of General History, and the class came to the story of the great schism in the Catholic church, when Martin Luther thundered out that the church was wrong, and he could show one hundred reasons why and where it was wrong—you all know the story—how the great Protestant church arose and finally went one way and the great Catholic church went another. Suppose now, that after reading this story and investigating both sides, a bright member of the class should say, "Mr. Browne, which side do you think was right, anyway?" What would I say? Ay, there's the rub. Well, I'll tell you. Very gently but very firmly I'd say, "Run home, my boy, and ask your mother."

Of course, here is a place for the howling critic to interpose a scathing comment—cowardly subterfuge, responsibility evaded, etc., etc. Not at all, but that is a part of the boy's character which I want his mother to mould, for I have lived long enough to know that the highest type of civilized man in the nineteenth century is still very intolerant of his neighbor's opinion on religious matters.

There are two things which should not enter the public school. Those two things are Religion and Politics. Understand me, please. No teacher can teach the subject of history without being obliged to explain and discuss many religions and religious doctrines from an historical standpoint. No teacher can teach the subject of history intelligently without tracing the rise and fall of many political parties and discussing their various platforms. But there his province ends. He should encourage investigation to find the truth on those matters, but has no right to advise the acceptance or rejection of any creed, political or otherwise. He must explain, in due time, what is meant by the terms Republican, Democrat, Populist, Prohibitionist, or Socialist, or on the other hand, Catholicism, Protestantism, Calvinism, Buddhism, or Judaism, but he must not attempt to force his own views on his students and in his narrow school room settle questions on which the great minds of the world differ. He is not hired for that purpose, and it would be culpably transgressing his authority.

No, the great use of the public school is to produce the moral and intellectual thinker—the thinker on right lines, and from that always results good citizenship. That this can be done without the school is true—but true for the exceptional individual only, and not for the mass. We of the mass need the refining process.

This truth does not need to be told to the great American public. The magnificence of the public schools now in operation the length and breadth of our republic attest to the value America puts on free education. Normal schools for the teacher are flourishing in every state; higher institutions of learning are being magnificently endowed and nobly supported. That we, as a nation, value education for its elevating effect on character is self evident.

Let us remember then, that wherever Old Glory flings its folds to the breeze, not only does it symbolize Freedom in a political and religious sense, but it stands as it always has stood, for that great character forming power, that bulwark of our civilization, the Free School.

THE FARM AND THE DEPENDENT CHILD.

By Mrs. Julia C. Lathrop, Rockford, Ill. Read before the Boone County Farmers' Institute.

What do we mean by a dependent child? How does the experience of other states and countries show that we may best care for dependent children? Have the farm and the dependent child a vital connection, or can one be es-

established between them? These are questions which, under present conditions in Illinois, are of urgent importance both for the humanitarian's and economist's point of view. Every kindly person and every taxpayer has an interest in them. When we seek for a definition of a dependent child and begin to study the dictionary and the Illinois statutes and the facts we are puzzled. The dictionary says that dependent means "relying on for support or unable to subsist or perform anything without the aid of. Children are dependent on their parents." Then certainly every child is of right and of necessity dependent, and we may say at once that no child can be a pauper—a word which indicates failure.

The statute has said that the child is dependent when the parental protection fails. So far all is reasonable enough, and we naturally anticipate that the State has proceeded to reason further thus: In principle every child is necessarily and of right dependent; until time, nature and education have made him capable of independence, he must plainly be supported in some manner, and since his future value as a citizen is measured chiefly by the wisdom and care which surrounds him during the period of dependency, the common good demands that when the normal family guardianship fails, the State should take up the child and secure for him adequate care and education. Now comes the facts to put all our excellent theorizing to rout. The State has not reasoned in this way. It is true that Illinois has defined a dependent child as quoted, but she has assumed no responsibility.

She has said, through the Industrial School Arts, that if a school shall declare a child to be dependent the State will assume no responsibility, but if benevolent people have organized an institution for the care of children called an Industrial School, the child shall be placed in the guardianship of the school during minority, and the county shall pay the school \$10 monthly for support of the child. This \$10 a month is the sticking point. If the county authorities are unwilling to pay the sum, as they usually are, the judge must be cautious about declaring the child dependent and thus subjecting the county to this expense. I have never known of a case in which a child was taken from a county poor house and sent to an Industrial School, although the law plainly contemplates that, in a few spasmodic cases where women's clubs or philanthropists have a season of excitement in Chicago, I have known of the removal of children from Cook county almshouses, but usually the children gather in there unmolested. Thus, although the State well and clearly points out the conditions under which a child can not be expected to grow up into usefulness, it exercises no authority to prevent these conditions. It does not forbid the retention of children in the almshouses. In this it is unique among the old and larger states.

In some localities sentiment is so strong that no children are allowed in the poor houses, still at the last report of the State Board of Charities 297 children were found in the worst poor houses, mingling with the drunken, idle, underwilled. Were it not for the aid given neglected children by the Children's Home Society, in placing children in homes through its agents, it is difficult to say how many children would be in the poor houses. Yet the law poorly seconds them in such matters. In one instance where I visited a poor house, two little boys six and eight years old, were mingling with the vicious and worthless inmates. They had never been to school. There was no mother and the father was a drunken creature, left them to be reared in the almshouse, yet refused to allow them to be placed in homes. The law permitted this, and does not protect humane efforts to give them a more wholesome life.

Another class needs consideration. The child grows up on the streets, a truant from school, neglected and idle, daily becoming sharper and more skilled in petty thieving. Such, by law, are left to grow into criminals so they can be more economically dealt with. What a travesty on humanity and justice. The boy soon ripens for Joliet or Pontiac and is kept at the expense of the State instead of the county. If all our charities, county and private, would unite and use legal and persuasive means and help parents only on the condition that they kept their children in school, there would be a change visible in the penitentiaries. The homes provided for children in institutions are unnatural. The necessity for order and discipline among so many

develops timidity, and one employer after a long experience with apprentices says that the institution boy was lacking in originality and vigor and showed in his work the lack of this early practical experience and discipline in doing things which every child naturally receives in an ordinary household. Michigan and other states are transferring their dependent children from unwholesome or vicious surroundings to a home in which he can have a chance to become a good and useful person.

I am not claiming impossibilities; all the wealth of human ingenuity can not recreate for a child the possibilities of which he had been cheated by bad parents or bad surroundings. When we seek for the place most likely to furnish the best conditions for growth, where do we find them? Country life is the wholesomest and best. It would seem a poor return for the stream of magnificent youthful vigor which the country sends to the city, should in return ask the country to take its children failures and make them into healthful beings. Let us remember that this is not a fair way to state the case. Disgrace and meanness go there too. The black sheep hides in the crowd of the city and the second generation belongs to alike both city and country. Must we not establish a connection between the farm and the dependent child in order to solve the whole problem of his case.

Must not the interest and patriotism of the country be enlisted in order to give these children, now a menace, the chance to become valuable. I am sure there is but one answer.

And now must we undertake to obtain such a law from our next Legislature as will make Illinois say to the poor dependent child; as she has long said to the rich child whose family protection broke down, "You are a ward of the State. Your name is upon the records of the court. You shall not be lost. The guardian appointed for you by the court shall report his stewardship."

At the Legislature of 1897 a measure was introduced embodying what seemed to those of us interested in the matter, the best features in the various systems so adapted as to meet the needs of our State with its present industrial schools. This law provides that no normal child between two and sixteen years should be allowed in an almshouse. It placed the responsibility for declaring the child's condition upon the county judge, where it certainly belongs, but placed the responsibility of subsequent care and of expense upon the State as a whole. This bill invited the largest coöperation with children's societies and provided for State care for all not otherwise cared for, and for State supervision of all dependent children. It provided for placing out—with thorough safeguards and for boarding—where necessary. Some measure of this nature will certainly be presented next year, and in the meantime the aid and coöperation of this Institute is earnestly bespoken.

FARMERS' ORGANIZATIONS.

FARMERS' INSTITUTES.

By W. M. Deweese, Deland, Ill. Read before the Piatt County Farmers' Institute.

To improve our Institutes in educational value we must first realize a need for a broader intellectuality, a more far-reaching, comprehensive and practical education upon all subjects relating directly and indirectly to our profession.

Do we, as representatives of the agricultural interest of this country, possess the highest degree of intelligence that should be ours upon all subjects pertaining to our calling? If we do, then a discussion of this topic would be useless. But when we affirm we do not; we think it can be done within the bounds of propriety and without insulting the most sensitive farmer in this audience.

Who among us today would say that the farmers of Piatt county have not been benefited by our Farmers' Institutes? Haven't we by the discussions upon rotation of crops and fertilization of lands gained ideas that we have put into practice with good results? Haven't we from discussions upon the animals of the farm gathered practical ideas which have caused us to observe more closely our horses, cattle, sheep, hogs and even the poultry, their habits, symptoms as to diseases and how to feed and care for them to get the most profitable results? Have we gathered any ideas of economics and general farm management that has been of assistance to us?

If we have our Farmers' Institutes have been of much value to us in an educational way. But shall we confine our sphere of investigation and explorations to the material subjects of the farm, or will we devote, at least, part of our time to topics which will give us a more comprehensive idea of what citizenship is in this country and our relationship to other industries?

We have often heard criticisms upon our Institutes because the programs sometimes embrace topics outside the farmers' active routine of experience and work. In my humble judgment there is no subject too profound to be beyond the grasp and careful investigation of the farmer. Why not be broad-minded with well disciplined intellects? We have time to read, if we will use it, and means to spare to purchase necessary literature if we will purchase it. As citizens of this grand country of ours with all the responsibilities resting upon us of properly using the sacred privileges of the elective franchise that the institutions of this country and the fundamental principles, which are so dear to every patriotic citizen, might be maintained and perpetuated, not only for ourselves, our children and our children's children, but for those who may live here during the centuries that may yet come and go, then we ask—is there any subject pertaining to state or nation but what we should honestly endeavor to bring within the scope of our comprehensions? It seems to me that every citizen, whatever his calling or occupation may be, owes to his country, to his own happiness and to future posterity.

As farmers do we make as careful an analysis of our relationship to other industries as we should? Let us remember we are only a factor in the great problem of national existence. If the agricultural interest of this country reaches its highest degree of perfection—the horticultural interest, the manufacturing interest, the mining interest and the stock raising interest must also be developed to their fullest capacity.

God, in His divine wisdom, has placed within the present territorial limits of the United States the natural resources for the use of man, if properly used and developed, to make us the greatest nation on earth and we as citizens and beneficiaries of these wonderful opportunities are responsible for their development. But we can never reach the highest perfection in development by sectionalism, factional strife or class hatred. We must work as one harmonious whole, realizing as individuals our dependence on one another; how much the success of one industry depends upon the success of all the diversified industries of the United States. And then we as a nation to reach up to our fullest capacity of usefulness and greatness are dependent upon harmonious relationship and mutual and honorable commercial intercourse with the nations of the earth.

It seems to me that the Farmers' Institute affords the best opportunity for education for the farmer of any organization that has ever been effected. Because our discussions are open and public. Among our auditors are the merchant, preacher, teacher, lawyer, doctors and editors, and very appropriately they are assigned places on our program. When our topics are discussed from a bias standpoint the subject treated can be criticised and supplemented in its discussion by the experience of those with larger ideas, a more extended experience or by one who through business or professional interest has a mutual relationship in the same subject. In this way we are bringing the dignity and nobility of the calling of the farmer in higher respect and placing ourselves not only where our vocation will be respected but those who are engaged in it will be respected and treated with the same consideration and honor as they who may be engaged in any other honest pursuit in life. If we expect our boys to be content on the farm they must be impressed with the

idea of nobility, respect and opportunity for development in its pursuits as well as pecuniary gain or else the calling will never appeal to his aspirations or ambitions.

We have our grave apprehensions as to whether the farmers' secret organizations have ever been of very great benefit to the farmer educationally, financially or in bringing his calling into higher respect or consideration; for under the cover of secrecy they have been made the tools and dupes of designing parties, their minds have been excited to prejudice, in many cases, against their best commercial interest, they have been poisoned with class hatred and factional strife and led to believe that they and all engaged in agriculture were only objects of imposition for all other trades and industries. Does such environments and teaching aid us financially? Does it appeal to our higher intellectual aspiration? Does it satisfy the ambition of our boys and girls? No! No! Let us have an education that will make our profession respected and honored as second to none, but the equal to the most exalted on earth.

The topics of farm management with all its subordinate subjects, such as rotation of crops, fertilization of the soil, managing stock to get the most profitable results, cost of production, etc., all appeal to us directly and we seek with zeal all the information we can possibly obtain upon these subjects, but shall we stop here? No! Let such topics have the greater part of the time of our Institutes. But let us realize the fact that our Farmers' Institute should also be the place to discuss questions of greatest moment as relates to other industries and to the highest appreciation of good citizenship. If our education through this agency is developed along these lines we will not only benefit ourselves but we can be a source of much good to the whole country. If we as farmers appreciate the need of a broader education, then the Farmers' Institute provides the means if we but embrace the opportunity.

What is the secret of the strife between capital and labor? We fear it is the want of a broad minded comprehensiveness of the relationship between the two on the part of the great masses of the labor organizations and too much greed and avarice on the part of capital. They can not separate without destruction to both—then what is the remedy? It is an education that will produce an intellectuality, in every citizen of the United States, that will be capable of determining upon general principles the relationship of the two factors; that will produce a patriotism that every subject will realize what a sublime privilege it is to be a citizen of this country; that its laws must be respected; that order must be maintained, and that within Old Glory's protecting folds lies the recourse for every wrong, let the offender be rich or poor.

Do we realize that the population of the United States is increasing at the rate of one million annually? This being the case what are some of the conditions to be met during the next century to accommodate this rapid increasing population? The tillable land is now, in a manner, all taken up. Our cities, by their over population of idle, dissipated criminal classes, are fast producing such a degenerated citizenship that anarchism, socialism and communism are quietly but nevertheless effectively working their way into the political organizations of this country to such an extent that the thoughtful observer looks with most serious apprehensions as to the probable result in the near future.

To overcome this it seems to me that it will become necessary to more thickly populate our rural districts, which we certainly can do without working any unnecessary hardship to any one. Let more be content with smaller tracts of land and more have ambition to own a few acres to make thereon a home for themselves and family. And he who has capital to invest and wishes to place it in real estate for security and thereby control large landed interests, let him so manage his lands that by a systematic subdivision of his land he may furnish to a worthy tenantry comfortable homes for their families, an opportunity to live by their own industry and economy, educate their children in the public schools and learn to respect God and His laws and thereby have a higher respect for the laws of man.

Then there are thousands of acres yet to be reclaimed, swamps to be drained, river bottoms to be protected from overflows and arid lands to be

watered. This must be done by investment of enormous sums of money, often times at most hazardous risks by the investors, yet it must be done that labor may be employed and homes, necessary homes, may be provided for our people. How it will all be accomplished we will not here try to discuss. Suffice to say that what our past history has accomplished it is safe to predict that the pluck and ingenuity of the enterprising Yankee will satisfactorily meet the emergency when the proper time comes.

Let us not forget that great as we are in area, with natural resources without limit waiting for higher developments, great as the possibilities of the people of this nation might be, yet not great enough to divide into sectionalism or factional strife and maintain our present form of government or develop its natural resources to its highest degree of excellency and bring to its people the greatest prosperity, happiness and blessings.

As farmers let us tear up the old pessimistic narrow gauge track and substitute, through our Farmers' Institutes, the broad gauge that will carry over its shining rails of mutual benefit, pulled by the locomotive of intelligence, the commerce of happiness, contentment, good will and prosperity as it comes from all the diversified industries, from the homes and from the individual citizenship.

BENEFITS OF THE GRANGE.

By Mrs. I. S. Raymond, Sydney, Ill. Read before the Vermilion County Farmers' Institute.

I assure you it is in humility and with a strong sense of its unworthiness that I present this paper on the Benefits of the Grange.

Though my father was master of a grange a good many years ago and took an abiding interest in the work, and in these latter years my husband has been a loyal granger, I have only been a member of the order a year and a half. I have not been a worthy or hard-working member, but I have been impressed with the possibilities of its helpfulness to the farmers in the way of education and entertainment, and have noticed with a little surprise and wonder that the grange is seldom mentioned on the programs of the Farmers' Institutes. When my old friend Mrs. Southworth asked me to have a little address at this meeting, she asked me to choose my own subject. I wished to oblige her for she has many times helped us in Champaign county. Whenever she has been called on she has cheerfully responded in aid of any good work. So I chose my subject without consulting any one, and Sydney Grange is in no way responsible for what will be inflicted upon you now.

There are many excellent people who have a misty notion that it is hardly respectable to be a "granger." That one must necessarily be uncouth (and have hayseed in their hair and dust in their clothes) if they belong to that plebian organization. Let us turn back the pages of our nation's history, and learn something of the origin of the grange. I have lately been reading Charles A. Dana's *Reminiscences of Men and Events of the Civil War*. In 1863 he was with Grant during the siege of Vicksburg,. After the army and its supplies had crossed the Mississippi, bridges were burned and all communications cut. Speaking of the march toward Jackson, Mr. Dana says: "In spite of the roughness of our life, it was all of intense interest to me, particularly the condition of the people over whose country we were marching. A fact which impressed me was the total absence of men capable of bearing arms. Only old men and children remained. The young men were all in the army or had perished in it. The south was drained of its youth. No wonder that some of the old men prayed for a speedy end to the Rebellion, seeing so much of total and hopeless ruin." "Slavery is gone, other property is mainly gone," they said, "but for God's sake let us save some relic of our former means of living." How much greater was the destruction after "Sherman's March to the Sea," Sheridan's raids and the many campaigns throughout the south before that solemn day in April, 1865, when Gen. Lee surrendered the Army of Northern Virginia to Lieut.-Gen. Grant. After the surrender followed the stormy years of Reconstruction. In January of 1866, O. H. Kelly was commissioned by Hon. Isaac Newton, Commissioner of Agriculture,

to visit the southern states for the purpose of obtaining statistical and other information in regard to the condition of the south and reporting the same to the department at Washington. It was while traveling in the south in obedience to these instructions that the thought of a secret society of agriculturists, for the protection and advancement of their interests, and as an element to restore kindly feelings among the people, first occurred to Mr. Kelly. Mr. Kelly was born in New England. He became a farmer in Minnesota in his young manhood. In 1864 he was appointed a clerk in the Department of Agriculture in Washington.

The idea of giving women full membership in the proposed Order of the Patrons of Husbandry originated with a niece of Mr. Kelley, Miss Carrie A. Hall, of Boston, to whom he had imparted his views of the new association after his return from the south.

In the full formation of the order six other men were directly associated with Mr. Kelley, namely, Wm. Saunders, of the Department of Agriculture, who, next to Mr. Kelley, did most in originating the order; Rev. A. B. Grosh, of the same department; Wm. M. Ireland, of the Post Office Department; Rev. John Trimble, J. R. Thompson, of the Treasury Department; and F. M. McDowell, a pomologist of Wayne county, N. Y., all of whom, with one exception, were born upon farms.

For nearly two years these seven men labored with great energy and with a faith and zeal amounting almost to inspiration, until, with the assistance of friends who became interested in the plan, they completed a well-devised scheme of organization, based upon a ritual of four degrees for men and four for women, which is unsurpassed in the English language for originality of thought, purity of sentiment and beauty of diction.

Having formed a constitution to govern the order to which this ritual was adapted, these men met on the fourth day of December, 1867, and constituted themselves the National Grange of the Patrons of Husbandry. Wm. Saunders as Master. The first subordinate Grange was organized in Washington, D. C., January 8, 1868, as a school of instruction, with Wm. M. Ireland as Master. The first regular subordinate Grange to which a charter was issued was organized at Fredonia, N. Y. Minnesota organized the first State Grange in 1869. The Illinois State Grange was organized at Dixon, Ill., March 5, 1872, with Alonzo Golder as Master.

The first meeting of the National Grange as a delegate body was held at Georgetown, D. C., January 8, 1873, with six of the founders of the order and seventeen delegates from eleven states present. In addition to these four women were at the meeting—Miss Carrie A. Hall, Mrs. O. H. Kelley, Mrs. D. W. Adams and Mrs. J. C. Abbott. At this time 1362 Granges had been organized. The last meeting of the National Grange was at Harrisburg, Penn., November 10, 1897. There were reports from thirty states. I notice that New York deposited by her State Treasurer for dues, \$2,085.43, while Illinois only paid in \$199.15. I am indebted to Mr. Alpha Messer, national lecturer, for information regarding the origin of the Grange, and to our State Secretary, Mr. Thomas Keady, for state and national reports and other helpful documents.

We have now learned that the Grange is a great civic order founded on the principles of equity and justice, and having for its objects the education, the elevation and the unification of the farming population of the entire country. Its motto is, "In essentials unity; in non-essentials liberty; in all things charity."

The Grange has conferred many benefits and obtained many privileges for the farmer, of which he is hardly aware. It was through the direct influence of the Grange that the Department of Agriculture at Washington was raised to the dignity of other departments of the National Government, to be presided over by a Secretary of Agriculture in the President's Cabinet, thus giving farmers a voice in the policy of the government as it affects the agricultural interests of the country.

Through the influence of the Grange the additional appropriations for agricultural colleges by the 1890 Act of Congress, were confined to instruction only in agriculture and the mechanic arts.

The Hatch Act for the establishment of state experiment stations, which are doing such a great work for the agriculture of this country, became a law by reason of the efforts of the Grange to secure its enactment.

Through the direct influence of the Grange the Inter-State Commerce Commission was established by act of Congress, which in a measure aims to control inter-state traffic, and gives the people a means of redress from the injustice and extortions which are often practiced by these gigantic corporations, thereby saving the people great annoyance, and vast sums of money in reduced rates of transportation.

The Grange has done much to bring about the equalization of taxes. It not only opposes the tyranny of monopoly but it insists that "the rich man's millions shall be taxed at the same rate as the widow's home or the poor man's cow."

The Grange has taken the initiative in advocating the passage and the enforcement of laws compelling all manufacturers to put proper labels on their food products and fertilizers. Secretary Wilson says: "The Grange is the representative body of half the nation—the quiet thinking half, the jury that decides when the people are in commotion and settles things rightly. You do not enact statutes but the law-makers seek and heed your counsel."

In business matters coöperative trading has always engaged the attention of the Grange. It has established mutual fire and life insurance companies and instituted inquiries about adulteration of foods. As an educator the Grange assists its members to enlarge the scope of their reading and strives to awaken an interest in all economic questions. We know that the scientific farmer is making "household words and fireside talk of what has heretofore been an unknown tongue." The Grange has a department for literary work which affords opportunity for a good degree of culture. The National Lecturer issues a quarterly bulletin which is full of helpful suggestions.

There is a benefit resulting from the responsibility of holding office in any organization and from the proper observation of parliamentary rules. The social benefits are incalculable. We are given opportunities for discovering that "we've all our angel side." We are permitted to learn new lessons of patience and charity because of our own weakness and frailties and the peculiarities of our brothers and sisters. If you will pardon an allusion to the family affairs of my own Grange I will tell you that I have many kind neighbors that I appreciate more fully because of an acquaintance formed at the Grange. I have been especially interested in a good many members of our Grange who have felt a pride and delight in their membership, because to them the Grange was a sort of home—that is the hired men—most of them only boys away from home, perhaps, for the first time. They like to stay in the neighborhood because they have this place to go for recreation. It is a pleasure to bake good things to eat and have a supper as we sometimes do, for all of our men folks seem to think it is the treat of their lives. The ladies didn't used to go to our Grange—then the men wore their old clothes and smoked (some of them only did this) but they come now all well dressed and our house is nicely swept and garnished and never a suspicion of tobacco smoke. So don't you think the ladies are one of the benefits of the Grange?

We have an annual fair at our Grange, too. An agricultural and house-keeper's fair, I guess you would call it. I will not take time to tell you about this. If you want to learn all about a successful Grange fair and how to conduct one apply to Past Master E. F. Block of Sidney Grange No. 502. I will just tell you one little thing. We did all rejoice together when a motherless girl, one of our youngest members, was awarded one of the pretty prizes offered by our townsman, Mr. Geo. Cole, for best mending. So we recommend to all of you farmers, old and young, the Grange as a true and tried fraternity in which we learn "to bear each others burdens and share each others joys."

In connection with this paper Mrs. Raymond read a very excellent personal letter from Mr. Alpha Merser, National Lecturer for the Patrons of Husbandry, in answer to inquiries about the influence of the Grange in New England. He said that the Grange had been a source of great benefit and pleasure to the people who live on the farms there. That they had learned to steer clear of politics and had kept their work on educational and social improvement lines. There is the greatest necessity for organization among the farmers that they may have a unity of purpose in demanding and obtaining proper recognition in all departments of their work, as well as do other organizations of professional and business men.

FARMERS' CLUBS.

By Roy Swigert, Dixon, Ill. Read before the Ogle County Farmers' Institute.

There are various clubs suitable for all vocations in life. Each and every class support some kind of a club. Nearly all are organized and directed toward some one particular object. Some for pleasure and entertainment only, while others are for the educating and uplifting of society. The same object is sought and obtained in the farmer's club. Why have we not more of them? Do we not need them? I believe there is no vocation that can find more profit, more enjoyment, and more instruction than the farmers' clubs. These clubs are composed of the men, their wives and daughters. There is one thing lamentable, not only in our clubs, but in our Institutes—that is, there are not enough of our young men attend them. For many years, and some still say today, "that farmers' clubs are no account; just a few old fellows meeting to discuss some old topic; or they are mostly old retired farmers. What do they know about farming? Why, if I want farm information, I would go to Mr. Brown or Mr. Smith; they know all about the management of a farm; they can tell me all I want to know?" Perhaps you did not want to know much. But can you follow even their guidance? Will it suit all your conditions? Is it exactly what you want? It is not the concentrated ideas of one man, but that of many, taken and compared collectively, and the most suitable points abstracted, from which the greatest good can come. You may hear some chance discussion that would open to new thoughts and help you to more fully develop some plan you had started, but failed on account of just such needed light. They are not only doing a vast amount of good in our committees, but are reaching and wielding a power in state and national affairs. The grange shows its power in many of our states today. The club is the culmination of a long-felt want—some place other than a street corner to discuss farm topics. There is no truer saying, and one that can do the American farmer more good, than fully realizing that "in union there is strength." I shall consider the benefit of farmers' clubs under three heads—Social, Intellectual and Moral. Socially, many farmers can see no benefits in such meetings; or, as they may term it, no profit—simply wasting time. They stay at home, keep their families there, except the weekly trip to town or some chance entertainment. Happy to state, this is rapidly disappearing, and none too soon. What has driven more young men and women from the farms than the lack of social intercourse among the farming communities? The day has passed when young people are to be made to drudge and plod unceasingly on the farm, from before daylight until after daylight, from early spring until the coming of the winter. You can make the work on the farm just as pleasant as you can unbearable. The club is one of the elements working for the betterment of sociability on the farm. We not only meet and discuss important topics, but exchange news of the day and enjoy a short and pleasant comparison of our past labor or enjoyments from meeting to meeting. There are many farmers who could do a vast amount of good work, most profitably in every community, if they could be called upon to give some of their methods, state some of their failures and their successes. No farmer should be so selfish, if he knew that by giving expression to some of his successful methods, that he might lend a most helping hand to some struggling but ambitious

neighbor. We are all on an equal basis. Practical fellowship among farmers is one of the greatest stepping stones to their success. There are no patent rights on farm methods or management. And you who hold to such ideas will get most agreeably left. Why is it that so many of our young men, just starting in farm work for themselves, become so discouraged? I sincerely believe it is the lack of interest some of the older neighbors take in them. They feel a kind of selfish pride, or else they believe that experience is the best schoolmaster. It may be a good one, but a little practical counsel will help the schooling most wonderfully. No; let us unite and help each other; organize clubs; discuss all phases of farm work to the best advantage. How often we hear the cry, "all the boys are leaving the farm and going to town." No, I am thankful to say, they are not all going. But why do they go? The excitement and push of city life fascinates them and they long for its satisfying power. But alas! They become just as tired of this as if on the old farm, and far more so, as some that have come under my own personal observation have found the farm more satisfying in the end. One mistake many fathers and even mothers make, is not endeavoring to give the boy a special interest in the farm.

There is no way open to the advancement of young men today but what requires honest, steady, never ceasing work, pushed on by the positive determination to succeed. Where can you bring together a circle of people who can find more enjoyment than a goodly number of young people assembled for an evening's entertainment at some roomy country home? Here can be made a special feature of the club, hold socials occasionally, get the young people together. The lack of these gatherings in our rural homes is a great wrong. Young people must have amusement; they will find it somewhere, either at home or in the towns. Why not aim to provide more in our country homes? The discussion of topics induce many farmers to state their ideas who might never be heard were it not for the club. It occasions research and close investigation, causes closer attention and special notice to our work. Supposing you hear a discussion on some particular topic, along which you have been experimenting or trying, you will surely take many notes and later will see if some will not benefit you. It causes newer and higher thoughts to develop, thus increasing the intellectual part of the club. The more we study farming the greater the theme becomes. How much higher has the intellectual scale been developed in our farms today from what it was twenty-five years ago. Book-farming counts today; it was then made sport of. Do you need to watch closely to discern the difference? Any first-class agricultural paper will tell that the clubs, Institutes and granges have advanced the scale many, many points. How often do we hear of the hayseed farmer today? Why are the dividing lines between city residents and rural folks fast dissolving? Why is it that the country boy or girl, in nearly every case, in our city public schools not only equals but outstrips their classmates of the city? It is the intellectual advancement of the farmer in his home. The successful farmer of today must be one who can grasp and retain a large amount of information, and in these monthly club meetings it can be supplied and very often be most helpfully reviewed. Any writer on farm life today will tell you that the successful and progressive farmer is the one who is educating himself every day—takes two or three of the best agricultural papers, attends the Institutes, and with his experience gained in our monthly club meetings, is able to express himself to the utmost satisfaction of himself and his hearers.

Many times we hear the morals of the farmers placed in a most unfavorable light, and in no place is it more fully depicted than in the great daily newspapers of our land. Why is this, and is it so? It certainly is not a fact that the morals of our rural districts far exceed those of our cities. Where are our worst and most desperate criminals from, town or country? Because we see that the greater per cent of murders, robberies and other violent crimes are printed as happening in the country districts, is positively no surety that two to one of these happen in the country, but so great are the number of the city that they are not exposed. Expose the crimes of some of our highest city officials and residents, and they would cast a shadow of deepest black over those of the country. True it is that the moral standing of many of our communities have degraded. But, my friends—especially the young men and women who are just appearing on the stage of action—whose fault is it, theirs

or ours? Are we not somewhat at fault? Have we taken as much interest in each other as we ought? Let us cast aside all selfishness, put forth our energies as young Americans, and so raise our moral standard that it may never be again assailed. We talk of the disgraceful rule of politicians. Whose fault is it? Never in the history of the State of Illinois were young men and even women needed more than they are today. The farmers of this State have the power to raise the disgrace of our State from its lowest ebb to the highest tide of honesty and integrity. Let us have more of these clubs where union may be formed until we are all one unit, working for the common good of all and not a few. We farmers have rights, and let us plainly and emphatically demonstrate them. How plainly the difference in the morality of a thriving, progressive community, shows above one of the opposite type. How much the sociability adds to the betterment of people.

Friends, I fully believe that the Rock River Farmers' Club has done more for the advancement of its members than any other agency ever employed. It causes them to think and study their work.

One of the men whom this country has delighted to call good and great, one of the best judges of that popular trait of humanity which tends to improve life's condition, Abraham Lincoln, who was raised on a farm, said: "Agricultural meetings are useful in more ways than one; they bring us together and thereby make us better acquainted and better friends than we would otherwise be. The man of the highest moral cultivation, in spite of all which principle can do, likes him whom he does know better than him whom he does not know. To this end these meetings contribute no small degree. They render more pleasant, more strong, and more durable, the bond of social and political union, associated with virtue and advantage; they are a present pleasure, to be followed by no pain as a consequence; they are a present pleasure, making the future more pleasant."

Permit me to give a short history of our Rock River Farmers' Club, of Lee county, organized in 1886, with but a few members, who held their meetings in some office in town. It has increased its membership to 150. It at first held meetings twice a month, but finding this too often they are now held once a month. A picnic is held every June, this being the close of the session until the following September, when the meetings resume. The custom has been to meet at the residences of its various members, but as the number in attendance has so much increased, the meetings will hereafter be held in the Farmers' Club and Reading Room at Dixon, to which all of you are most cordially invited at any time. A program is arranged for the entire season, topics chosen and assigned for different ones to lead. The ladies are considered honorary members. To become a member necessitates the payment of \$1, and the constitution and by-laws. Many important questions have been presented, and much valuable aid has been found in the discussions. It not only helps the country, but its aid to the city has many times been shown by their expressions and generosity.

OFFICERS FOR 1898.—ILLINOIS LIVE STOCK BREEDERS' ASSOCIATION.

Officers—President, A. P. Grout, Winchester; First Vice President, John H. Kincaid, Athens; Second Vice President, R. M. Bell, Decatur; Secretary, Fred H. Rankin, Athens; Treasurer, Chas. Ridgely, Springfield.

Executive Committee—A. P. Grout, Winchester; John H. Kincaid, Athens; R. M. Bell, Decatur; Fred H. Rankin, Athens; Geo. Williams, Athens; J. H. Pickrell, Springfield; Chas. F. Mills, Springfield; John G. Springer, Springfield.

ILLINOIS CATTLE BREEDERS' ASSOCIATION.

Officers, 1898—President, A. P. Grout, Winchester; Vice President, J. F. Prather, Williamsville; Secretary, J. H. Pickrell, Springfield; Treasurer, Thos. Clark, Beecher.

Executive Committee—Col. W. H. Fulkerson, Jerseyville; N. M. Lodge, Monticello; T. C. Ponting, Moweaqua.

ILLINOIS HORSE BREEDERS' ASSOCIATION.

Officers, 1898—President, John H. Kincaid, Athens; Vice President, J. C. Ware, Champaign; Secretary, Geo. Williams, Athens; Treasurer, J. F. Smith, Auburn.

Executive Committee—E. C. Pace, Ashley; J. Tabor Mathews, Jacksonville; A. F. Moore, Polo; Robert Burgess, Wenona; Geo. Peak, Winchester; W. C. Moore, Springfield.

ILLINOIS SWINE BREEDERS' ASSOCIATION.

Officers, 1898—President, Fred H. Rankin, Athens; Vice President, C. E. Vigal, New City; Secretary, Chas. F. Mills, Springfield; Treasurer, J. R. Fulkerson, Jerseyville.

Executive Committee—A. P. Grout, Winchester; H. O. Minnis, Sharpsburg; Frank H. Whitney, Athens; W. C. Pearson, Vermilion.

ILLINOIS SHEEP BREEDERS' ASSOCIATION.

Officers, 1898—President, R. M. Bell, Decatur; Vice President, R. J. Stone, Stonington; Secretary-Treasurer, John G. Springer, Springfield.

Executive Committee—John S. Lyman, Farmingdale; J. D. McMurray, Curran; John S. Campbell, Clayton; G. M. McMillan, Canton.

PROCEEDINGS OF THE ANNUAL MEETING OF THE ILLINOIS
LIVE STOCK BREEDERS' ASSOCIATION.

SUPREME COURT ROOM,
STATE HOUSE, Jan. 20, 1898.

Meeting was called to order at 2 o'clock P. M. by the Secretary, Mr. Pickrell, who nominated Mr. A. P. Grout, of Winchester, for President, who was unanimously elected.

The Secretary then read the minutes of the last meeting and same were approved.

Nominations for the offices of President, Secretary and Treasurer were then declared in order.

Mr. Springer said that in view of the fact that the Vice President had twice filled the chair, he believed the Association should elect him as their President, and proceeded to make a motion to that effect.

Mr. Grout was unanimously elected President for the ensuing year.

Mr. Pickrell nominated Mr. Fred H. Rankin for Secretary, and he was elected by acclamation.

Mr. Kincaid nominated Mr. Charles Ridgely, of Springfield, for Treasurer, who was unanimously elected.

Mr. John H. Kincaid was elected First Vice President and Mr. R. M. Bell Second Vice President.

Executive Committee—A. P. Grout, Winchester; John H. Kincaid, Athens; R. M. Bell, Decatur; Fred H. Rankin, Athens; Geo. Williams, Athens; J. H. Pickrell, Springfield; Chas. F. Mills, Springfield; John G. Springer, Springfield.

Mr. Charles F. Mills said that he had talked to quite a number of the gentlemen present and found them in favor of the idea of coöperating with the State Fair Association in promoting the live stock interests. And he made a motion that a prize ribbon be offered by the Illinois Live Stock Breeders' Association for the best Shorthorn bull exhibited by an Illinois breeder and a similar prize for the best male and female of each breed recognized in the premium list. He thought the ribbons would be appreciated just as highly as any that would be presented at the State Fair, the awards to be made by the State Board of Agriculture.

Mr. Mills' motion was seconded by Mr. Pickrell, who stated that the Shorthorn breeders, through Mr. Brown, at the World's Fair, got up a splendid ribbon, and the exhibitors prized them very highly, and stated that he was heartily in favor of the plan.

Motion of Col. Mills carried.

Mr. Garrard stated that an appropriation of \$1,000 was made for fat steers exhibited at the State Fair.

Mr. Mills made a motion to request the State Board of Agriculture to add prizes for fat hogs and fat sheep to be exhibited at the State Fair. Mr. Williams seconded the motion.

Col. Fulkerson, after an interview with Mr. Garrard, stated that the Board would do everything that it could, but that they would have to go to the Superintendents of the sheep and swine departments and ask them to put the prizes requested in their premium list. Motion carried.

Mr. Moffat made a motion that the Association add a prize ribbon for sweepstakes for fat stock classes, same as agreed upon for the breeding rings.

Mr. Mills seconded the motion. Motion carried.

Mr. Hudson asked the Association to pass resolutions asking the people in Chicago to encourage the Fat Stock Show to be held at the stock yards in the city, where the fat stock could be shown and afterwards disposed of if the owners were so inclined.

Col. Fulkerson:—"We had a Fat Stock show once at the stock yards, but the people did not come, and I think it was Thursday of the week of the show we had the doors wide open, and there was not six that went in to look at it free. We could not get the people to come to it free of charge."

Mr. Hudson:—"The stock yards and all the great packers make their profits out of this industry and they ought to encourage it, and foot the bills if necessary, and have it for the live stock breeders of the United States and not for Illinois alone."

Mr. Moffatt:—"I have thought of the situation previous to this time, and I am at a loss to know why it is not made a national affair."

Mr. Mills:—"I would like to say that it is national so far as the competition is concerned."

Col. Fulkerson:—"Although it is national in one sense of the word, the State of Illinois has given all the money, the people from other states come in and take the premiums and pay nothing."

Mr. Pickrell, speaking of the American Live Stock Association that had been formed, said: "Most of the associations contributed \$50, and it was expected that they would manage it so that in the end they could make a fair. The World's Fair came on, and it was abandoned and left just as it was. The money is in the treasury yet. Mr. Harvey was President, and I have been in correspondence with him in regard to the matter, and he thought we should call a meeting and determine what was best to be done. They should either go on, or else quit and pay us back our money. Our association, the American Short Horn, paid in \$50, and nothing has been paid out that I know anything about."

The Secretary made a motion that the Association request the American Live Stock Association to call a meeting to determine whether they will or will not continue the organization.

Col. Mills seconded the motion, and it was carried.

Col. Mills:—"I would like to make a motion, Mr. President, that the Chairman, Secretary and Treasurer be appointed a committee to confer with the State Board of Agriculture in regard to prizes for fat hogs and fat sheep, and take up with them the matter of granting the request of this Association to offer these premiums, and that we appoint a committee to coöperate with the State Board."

Motion seconded and carried.

President stated that if there was no other business to come before the meeting the first topic on the program would be taken up, Horse Breeding.

Mr. John Kincaid, of Menard county, spoke as follows: "I thought certain gentlemen had been selected who could furnish us a good afternoon's entertainment, and I have had no notice to the contrary until now. Some of you know that I am no speaker, and I will soon convince the rest of you of the fact. I have made no preparation for the discussion of the subject. We all know, especially we who have been in the breeding business for the past five years, that we have had a dark time of it, but now there is a break in the clouds through which we can see a better time ahead in the horse breeding business. While we have a surplus of the lower class of horses, we are very short of good horses for two reasons. We hope the times are getting better and that a revival of business will make more of a demand for horses. The exporting of horses is the greatest draw on the supply of our good horses, and the exports have increased greatly in the last few years. It is only a good grade of horses that are taken for this purpose. It was but a short time ago that I know of a team of horses 5 or 6 years old that sold for \$500. In the same sale a roadster sold for \$460. This is the only class the exporter wants, and it makes a double demand for them. This is true of any kind of horse, draft, coach, carriage or speed horses."

Mr. George Williams, of Menard county, spoke as follows: "It is pretty hard to make an address before an association of this kind on the horse

question. We are beginning to get up out of the gutter in this business if we take into consideration some of the sales we have had recently. Of course, the only kind of horses that brought high prices at these sales were the very highest grade of horses, and they are the ones we should raise. For quite a while we have been raising horses at a loss. I think a great many of us have learned the truth of what Mr. Bonner said: 'That the best way to raise the price of horses is to stop raising them.' Along about fifty years ago about all the horse raising done in this country was done by farmers. And not only did the mother raise the colt but she did her share of the work on the farm. The big monied men began to collect these good horses when the business began to be profitable, and they kept them in idleness. But I think that the mare is not kept in as good condition as if she does some work. Now we have been through a very hard time, but take the sales for the last few months, and we find that good first-class horses bring a good first-class price. At the Kansas City Horse Show \$4,000 was paid for a carriage team. Ticknor took down a team of horses to the New York Stock Exchange sale and sold them for \$4,600. The same man that bought them paid \$1,600 for a coach team. Why can't we have more of that class of horses? Would not we all be willing to raise horses for \$6,200 for a four-horse team? You take the city buyers and they know a horse just as well as we do. We can not force on them any horse that they do not want to buy. What we want to do is to raise a class of horses that will sell in the city markets, whether draft, coach, saddle, light-harness or thoroughbred. The man that buys sets the price, but owing to the scarcity of good first-class horses the demand for them will keep the price up to the top notch. I hear a great deal about horses being crowded out by the bicycle and gasoline spinners. What good is a bicycle today—mud about knee deep. What farmer could use a motor carriage to come to Springfield today. They are no good for a day like this. They cost too much, and who that is a farmer would not rather hold a pair of reins over a first-class team than ride in a motor carriage or pump a bicycle. But I am not against the bicycle. I am in favor of letting those people get used to out of door life, and then they will come and buy our horses. The only motor carriage I ever saw that was a perfect success is the kind we use in Menard county, and we hitch mules to them to make them go. As a rule the horsemen are not feeling so badly as they were a year ago when we met. I think that the people that have persisted in breeding the best grades right along are ones that will not tell of the good times coming but the good times that are."

Mr. J. C. Ware, Champaign County: "Gentlemen, I have been a breeder of horses for thirty-five years, and was raised under a horse administration, and I can never hear a horse talked of but what I imbibe some enthusiasm. For a number of years there has been a great deal to cool the ardor of horsemen. We have been rowing entirely against the stream. There has been a vast overproduction of inferior horses. We have not bred for the markets. We have been breeding to suit ourselves, and without regard to the demand for the kind of horses we were raising. It came to be so that a farmer would put a notice on his gate to come in and take a horse as a gift but be sure and shut the gate. Misfortune is a better educator sometimes than success. Now we have started out to breed a general purpose horse, when the real fact of the matter is there is no general purpose horse. There is no demand for any horse except for a specific purpose. We have been breeding anything that would get with foal to all kinds of stallions, the only thing required of him was that he have the ability to reproduce himself. In the last six years we have not produced 50 per cent of the horses that will be required. We have not enough now. You may go through the country, and you will not find one draft horse now where there were ten five or six years ago. I had a sale two years ago, and had my farm well stocked with good draft horses, and guaranteed that any man that bought a colt there I would give him double the price paid within two years. I will say that in the State of Illinois there is not as many good draft horses today as there was in McLean county five years ago." Speaking of Ohio, Mr. Ware said: "That while the county of Union in Ohio was naturally poor the horse breeding business has made a great many farmers wealthy, and the collapse in the business injured that county more than anything that ever happened. The mistake we have made is that we

have bred inferior mares to inferior stallions. There has been a vast over-production of inferior horses. We have come to the time that men as well as horses have to be fitted for some special work, and unless they are they will be cheap men and cheap horses. We have to produce a good horse. The buyers are more critical than ever before, and they will have to have a better class of horses. They want something good. Everybody is willing to pay a good price for what they get if it is exactly what they want. The country is full now of inferior horses but there is no place for them. There is no class of horses that has ever been displaced by the bicycle and motor carriages unless it is the inferior horses. We will have to breed for a horse that is suited for the market. If a man is looking for a first-class road horse, you could not sell him an ordinary horse at any price. Same is true of the lumber business. If a man were fitting up for lumbering camp he would hardly take inferior horses as a gift, but would be willing to pay well for the kind of horses that are fitted to that business. My idea is that we ought not to breed inferior mares and ought not to patronize inferior stallions. There is a class of stallions all through the country of no breeding, in the hands of men that can not take the proper care of them, and this fills the country full of cheap horses, sired by accident and dammed by all the neighbors. A stallion should be masculine in every particular. For a dam, you want one that is a mother to a foal. We must just flatly refuse to breed any but first-class, and in that way we will raise the demand for those kind. I look for a real famine for first-class horses in the next five years. The production has dropped off in the old country. It is an utter impossibility for the breeders to supply the demand for the next five years, because the time has passed to get them. They have not been produced. Buyers will go forty or fifty miles for a first-class colt. Within the last two months I was offered \$225 for two sucking colts. They are nicely bred and first-class individuals, and that kind are exceedingly scarce, and there is going to be an extraordinary demand for them, and we have an opportunity to make our money where we lost it. I remember not a great many years ago at a sale in Ohio I bid \$600 for a colt at the side of the dam, which was imported, and it went to \$1,000 so quick I could hardly catch my breath, and they wonder why you will not take \$100 or \$125 for a colt now that will go to supply a demand that will be in every respect equal to what it has been in the past. I feel that horse breeders have everything to encourage them. We have passed through a period of very high priced grain and very low priced stock, but the time has come again when we have low priced grain and high priced stock. When you cut off a staple like horses 50 per cent or 60 per cent it is like taking an inch off a man's nose."

Mr. D. W. Smith, Sangamon County: "I have noticed all my life that there were many points of similarity between men and horses. The best horses we have are raised on the farm, and it is the same way with men. I am sorry to differ with some of the speakers, but I think the general purpose horse is the best horse to raise. It does not follow that the general purpose horse is good for everything, of course, but I believe it is the most profitable horse to raise, and I think the remarks of my friend, Mr. Ware, might be quite misleading."

Col. W. H. Fulkerson, Jerseyville: "I have got a pair of horses at home that are 17 hands high, standard bred, everybody wants them, but I want them too, and I keep them. I think I could sell all I could raise of the kind. Talk about style! Style seems to be ignored with the exception of the coach and saddle horse. It is natural for a horse to get his head up, but it is not natural for a horse to get his nose away up so that he could not see where he was going. You should give more attention to style. I never breed to a horse that has not size and style."

Mr. John Kincaid, in speaking of the high prices that first-class horses were bringing, said: "A pair of mares were sold not long ago at Madison Square Garden for \$6,200. They were speed mares. There were two others that sold for \$3,600. Another was sold for \$1,800. They were all taken to Vienna by one exporter."

Mr. L. Butterworth, Chicago: "The horse breeders have everything to encourage them. The demand is increasing for good horses, both for the home and export trade. The export trade has doubled every year for three or four years. They want nothing but the best class of horses. We find we can sell them at big prices if we can but raise them."

Mr. Moffatt, Paw Paw: "Although I am known as a breeder, I have gone out of the business in a great degree. If I had my life to live over again, I would not pour money into a horse and expect to make a fortune."

Mr. J. F. Smith, Auburn: "I hardly think it is fair to call on me. I have been a breeder of draft horses, but came to hear and not to be heard. I have found out one thing, that whenever I get the quality I can get the price. There is quite a demand for good young stallions, but everyone is afraid of the price. While I have been breeding draft horses, I have been rather successful under the circumstances, but did not get such prices as I expected. In the matter of stallions, they want to buy them less than a man can produce them for. I had two sucking colts at the Fair and a man offered me \$100 for one and \$150 for another. Mr. Noble King, of Bloomington, offered me \$100 for a colt four months and a half old. The feeling among horsemen is much better than it was a year ago."

Col. Mills: "Mr. Butterworth has called attention of some of the gentlemen present to a meeting to be held in Chicago soon to take up this question of marketing stock. I want to call attention to the fact that the essence of the whole question of breeding stock is to be able to market your surplus successfully. There is a great deal to learn in the matter of public sales. I think some action should be taken in regard to this matter at this meeting. We should coöperate with each other in every way possible, not only in breeding, but in the sale of stock."

Col. Fulkerson made a motion to adjourn to 7:30 o'clock this evening. Motion carried.

EVENING SESSION.

SUPREME COURT ROOM, January 20, 1898.

The Association was called to order at half past 7 o'clock by President Grout, who asked whether they would go on with the program or attend to the business before the Association first?

Col. Fulkerson thought that if we were going to adjourn tonight we had better finish up the business.

Secretary Pickrell thought that it would be better to adjourn the meeting until the first of June.

President Grout said that some of the speakers that were down on the program were not present. Said they had failed to get some speakers of national reputation, but if the time was changed to the first of June he thought there would be no doubt but what the live stock men of the State would be present to address the meeting. Thought there ought to be some effort made whereby all the breeders of pure bred stock could contribute at least a dollar annually for the benefit of this Association and become members of it. Thought we should work the matter up on this line.

Mr. Fred H. Rankin, Athens, thought that the live stock men of the State should be in favor of bringing all the live stock men together annually.

Mr. F. J. Berry, Chicago, suggested that December would be a better time than June. Said June was a very busy time for horse breeders, and that December would be far better. Said the time had arrived when we must do something. Stock interests of all kinds had been languishing and going down, and our leaders, a great many of them have passed away, and others have taken a back seat. All stock interests are in the background. It is time that we step to the front and do something. The time has arrived and now is for every lover of stock, no matter of what kind, to step to the front and lift up his voice and use his influence in favor of breeding better stock of all kinds.

Mr. Kerrick, McLean county, thought the question puzzling us most was whether there might be a better time for holding the meeting. He thought the mid-winter was the best time. Said if the farmer has any leisure time it is in the middle of the winter. He thought the occurrence of the Farmers' Institutes at this time would not work against the meeting of this Association, as the people are full of the stock question at this time and crying for a central meeting. The lack of interest here is just simply a reflection of the general lack of interest throughout the State in the breeding business. He thought we had better keep on on this line and at this time. He thought by persistent effort the stock interest of the State could be revived. Said he thought there was a better time coming for corn, and we have seen some signs of it now. We have the right kind of lands and are near some of the greatest markets, and this region is eminently adapted to the feeding and raising of stock and especially of beef cattle. But we are almost out of the business and something must be done to revive it. Fertility is what makes land valuable, and raising corn year after year would eventually take the fertility out of it. He was in favor of anything at any time and at any place that would revive the stock interests of the State.

Col. W. H. Fulkerson, Jerseyville, said the idea of changing the time of meeting was because we could not get speakers in the winter time on account of their being busy with Farmers' Institutes.

Mr. F. J. Berry said he intended to devote a great deal of his time to the interests of agriculture and stock breeding, and he was willing to help the Association as much as possible, let it meet when it will. He thought November or December was the best month, however, but the men knew more about it than he did.

Mr. Frank Gaston, Normal, said he had had some little experience in the Institute business, and that last year they were disappointed in trying to get speakers of note from a distance in the middle of June, and thought this year they would hit it right to set the meeting for December 8th and 9th, thinking to head off County Institutes, but the speakers were engaged just the same, and so we did not help the matter any. If we could head off the County Farmers' Institutes he thought it would be a better time to hold this meeting along about the first of December. He thought the best way to get up a crowd is to get up a good meeting and good speakers and advertise the meeting the same as a circus. That is the way we have done with our County Farmers' Institute—advertised it. Next December we will have to have a larger hall to have our meeting. If you advertise it the people will come.

Mr. Moffatt, Paw Paw, said that Mr. Berry thought that if the meeting was held in June he could not be with us, but that if it was held in December he could be here.

Mr. F. J. Berry spoke of April, but some of the members thought that was entirely too busy a month for the farmers.

Mr. Pickrell said it seemed to him that the meeting should not conflict with the regular Farmers' Institute. The same class of men came to both meetings. The breeders would go farther to attend a meeting than the farmers.

He thought if they could get up a good programme they would have a better and larger meeting. It seemed to him that the most leisure time for farmers was along in August, as after the harvest they generally take a rest.

The chairman suggested that a hat be passed around and each one vote for the month they preferred for the next meeting.

Mr. John Springer, Springfield, thought we should have the meeting either before or after the Farmers' Institute.

Mr. Kerrick said that the farmers were busy along in June and the professors are all turned loose, and if you have it at this time take some chances of turning it into a professors' meeting.

Mr. Springer called attention to the fact that some of those present thought they were not voters, but said they were all members, the chair agreeing with him.

The result of the vote was as follows: June, 9; January, 6; December, 5; November, 4; October, 2; August, 2; March 1, and February 1.

After the result of the vote was announced, Mr. Ware said he would vote for what he thought was for the best interests of the organization, but was not farming now, although was familiar with farm methods, and felt quite sure that that season of the year (June) with the farmers would be taken up with their crops. He thought November or December was better than June, as that would avoid the fall election and also the Farmers' Institutes. He did not believe they would get a very large attendance during the crop season. They are then engaged in the production of their crops, and he thought the best time would be late in November or early December, and that it would be for the best interests of the organization.

Mr. Butterworth thought November would be a much better time and just in advance of most of the Farmers' Institutes and after the fairs.

Mr. Maribold stated that as June was such a nice month to go fishing, it would be rather a drawback for the Association to meet at that time.

Mr. Springer thought that if they met in June they could then do some good for the fairs and get the fairs to help them out in return.

Mr. D. W. Smith thought that not one man in fifty that would attend these meetings were workers on the farm anyway, and thought that the breeders would have time to attend these meetings in June.

Mr. Springer made a motion that the time of the meeting be in June. Motion seconded.

Mr. Ware moved as a substitute that the meeting be held in November.

The Association voted on the substitute, after which the original motion was voted on, and the substitute carried.

Chairman asked if it would be better to fix a certain date for holding the meeting in November.

Mr. Berry made a motion that the date be fixed as near the 20th of November as possible, and then it would be out of the way of the election. Carried.

Mr. Berry made another motion that the actual date be left to the Executive Committee. Carried.

Mr. Pickrell asked in regard to the Omaha Exposition funds, and asked to hear from Mr. LaFayette Funk, the chairman of the Live Stock Committee.

Mr. Funk, the chairman of the committee, said that five thousand dollars had been appropriated to the benefit of agriculture and live stock, but he did not know how it would be divided.

Mr. Mills made a motion that a committee be appointed to confer with the Omaha Exposition Committee. Carried.

Motion made that chairman appoint the committee. Carried.

On the question of how we could arouse more enthusiasm in these meetings, Col. Charles F. Mills thought the best talent should be secured, and that in order to do that a committee should be appointed to prepare an outline for a programme, and commence the work of securing speakers immediately.

Mr. Frank Gaston made a motion that one representative of each of the State Breeders' Live Stock Associations be appointed to work in conjunction with the Secretary of the Association in working up an interest for the next meeting.

Senator Funk stated that Col. Clarke Carr, the chairman of the State Commission for the Omaha Exposition, was there, and perhaps the meeting would be glad to hear from him.

Col. Carr said he wished to state that he and Mr. Funk, while at a meeting recently held in Chicago, discussed this matter and thought it was best that Mr. Funk and himself should attend this meeting of the Live Stock Associations and give any information concerning their interests in the commission. In regard to the appropriation he said that the commission could not possibly go beyond the \$45,000 which had been appropriated. Spoke of the Illinois

building as being very beautiful, and almost completed, and would cost \$15,000 exclusive of the furniture. Said it would be a place of entertainment for the Illinois friends, and everyone from Illinois would be welcome. He thought the largest exhibits would be manufactured articles, especially agricultural implements. He said he thought that exhibitors taking live stock there would have a chance to sell the very best grades to Kansas and Nebraska and Iowa. He thought that the Omaha Exposition would be the center of a great market, better even in many respects than the World's Fair. We can sell them the cattle that will tone up theirs. It is the best place to exhibit those articles we can conceive of. There would be people from all the country where we want to sell. We have a committee on live stock and agriculture, and we have decided that, considering the amount we have for all purposes, we can only set apart five thousand dollars for these interests. The portion assigned to live stock must necessarily be a small amount. But we want to assist you in the best way.

Mr. Kerrick made a speech on the subject of "Cattle Breeding and Feeding." He said, among other things, that he came here to hear a paper on "Cattle Breeding and Feeding." Said he had made no preparation to take the initiative in talking on any kind of cattle. Said he had expected to hear Prof. Curtis, of Iowa. He had never seen anything from his pen but what sounded like business. Said he did not know very much about the cattle business, but anybody can see this much, that great changes have taken place in the cattle business of Illinois in recent years. That mere statement is enough to arouse some interest as to what the change is and what it means. You all know that twenty years ago the Shorthorn beef breed of cattle was well established in central Illinois. The cattle were suited to the land and the land was suited to the cattle. Said there was no place in the world where there was so much fertile land as in central Illinois. The sums of money were almost incredible that had been spent here in establishing the Shorthorn breed, but that now the industry had declined a very great deal, and just as sure as the world some serious results would follow, and are following. First, he said, the whole country had been run to corn, sinking the price of corn to the lowest figure. We have cheapened it by piling it up. And another thing, it was lessening the fertility of the richest country in the world. We live here on these rich plains because they are rich, and people pay these high prices for them because they are so rich. The time will come when they will be doubly worth what they are now if we take care of them, that is, increase the fertility of the land instead of running it down. Said it was not long since beef cattle by the trainload was produced here and sent all over the world and brought money here to pay our mortgages, etc. Next to Illinois land he counted nothing more valuable than Shorthorn cows. Beef cattle breeding is about at an end here in Illinois. They are growing scarce. We owe it to the stock institutions, owe it to the people, to do everything we can to arouse interest in live stock breeding, raising and feeding. The question comes up, can we raise beef cattle here any more on these high priced lands and get the proper return for our investment? You have the land and you will do one thing or the other with it, raise corn and reduce the fertility of the land, or raise cattle, putting more of the land down to pasture. The man who raises beef will have no trouble in keeping up the fertility of the land, and have not the least doubt in the world but that you will make a better per cent by mixed farming, going especially to beef producing and stock raising, and do more business upon less ground. We have got to get to market quicker than we used to; we have got to get there with a better beef than we ever have, and must get there with more beef to the acre than we used to. That means the best methods of feeding and producing.

Mr. Gaston read a paper on the dairy markets. In 1895 we exported 21,000,000 pounds of butter at an average of 33 cents a pound, and in 1896 we exported only 19,000,000 pounds of butter at an average price of 15 cents. Now, it is not fair to say that the quality of our butter has deteriorated, unless we take into account the fact that so much bogus butter is exported. Manufacturers put in lard and tallow and call it butter, thus fooling the consumer. This cuts the price in two, besides decreasing the amount. Said he did not think the bogus article should be allowed to impose on the genuine, because it could be made cheaper and more money made out of it. Believed in trying

to do as you would be done by, and denounced bogus butter as an imposition on the dairy business, and did not think it fair to impose on one business in that way. He did not believe in calling the butterine something it is not, thereby getting a good price for it. Said persons handling this butter would lie about it, selling it as good dairy butter, and when the buyer reached home he would find a butterine label on it. There was no law against lying, but there was a law against selling it without a label. They want butter, but they do not want to eat lard and tallow on their bread. The imposition is on the dairy business, and hoped the Association would look at it from the right standpoint and try to treat us fairly.

Mr. J. F. Berry, of Chicago, spoke as follows:

"It is rather late for me to commence to talk in the interest of the horse. A few of us lovers of the horse have been thinking of calling a National Convention in Chicago and perfecting an organization in the interest of the horse, and I think we have the support of the importers and the dealers and I think we might call a meeting there and have a very successful one and form an organization to take in the whole United States. There might be a great deal of good gotten out of it. We are open to suggestions on it, and if the horsemen feel inclined to assist us we will take hold and do something. We would like to have an expression from every one that is a lover of the horse, and all such can address me at Chicago. It is a little late for me to commence to talk about the horse, because I sometimes talk too long. I think the most proper question for me to take up this evening about the horse will be the feeding, fitting, preparing, putting on the finish and making him ready for the market to get the best price. If I should go over the whole ground there is much to say and I could only touch upon the subject. But we have a little while yet; perhaps I can interest you. You gentlemen that raise stock and cattle and most of the farmers leave off right where they ought to take them.

I am a farmer and I used to raise stock, and I used to breed horses and raise them. But now I buy them and feed them for market. I can make every bushel of corn net me 50 cents a bushel and feed it to cattle. Now I will tell you what I do in Chicago. I will take the feeding of the horse right in the city, the most expensive place, and I will show you where we can make money in feeding horses right there, and make them pay one dollar a day for every day we feed them. Now let me tell you what I do if I want to make the very best investment. I get some horses to feed, and I take class No. 1, 16 hands, 1200 pounds, fine tail, fine neck, good bone, short back, good feet, and moves away with fine action, and he is a straightline mover, goes right straight ahead. Well, now I will just take one horse that I bought and I will call him a sample in the business. He is just a little extra. Now these kind of horses are scarce. He weighed 1140 pounds, and he had all those qualities that I spoke about excepting that he was not in condition or was not fit for market. He came from Iowa and was sold in an auction. He was not properly broke and not properly fed. He brought \$65 at auction. The party who bought him refused to take him. After he was rejected I saw there was merit in him and asked the man what he would take for him. He said \$70, don't you think he is worth it? Yes, he is worth it and I will take him. I took and put him in a barn in the city in a box stall, and put a man to take care of him. Had him hitched every day, and first walked out slowly, the next day a little faster, and in the next few days got him going at a seven miles an hour gait. Made him familiar with the cable and electric cars to get him city broke. I kept that horse in the city 30 days, but he was not quite in the condition I liked. He weighed then about 1200 pounds. I then sent him to the farm because I could feed him cheaper. I kept him there 24 days, and I thought then he was about ready to sell. I brought him in and kept him in a stable six days, and I put a light sheet on him and took him out every day, and in six days I got his hair shining nicely. He now weighed 1240 pounds, a gain of a hundred pounds in 60 days. The value of a horse is in his education as well as in his development, and I put this horse on sale and he brought \$250. Now see what I made. If I can do that in Chicago all you men can do the same thing by proper consideration and study of the matter. I fed this horse mostly on oats. I generally feed middlings and good timothy hay. I try to buy hay of people that cure it the way I do, hay that is cut in the blow.

Rake it up over night and put in a bunch and next morning open it out, and then the hay will be sweet when you take it out, and I can fatten a horse on that kind of hay and never give him a grain of corn. I will next take the draft horse. I want to say that this class No. 1 is worth two or three times what he was worth years ago. Those in the second class are now worth more than they were years ago. But when you come down to an ordinary horse they are no higher. When you feed a horse feed a good one; when you raise one raise the best you can, no matter what kind. Now the next kind of a horse will perhaps be a better one for the farmer. There are five classes and if he don't come in one of these he is no horse at all.

One man takes care of about 15 horses for me, and takes each one out about 15 minutes a day and walks him around. I keep a horse about 30 days and then weigh him and expect a gain of 100 pounds, and the average is more than that. Say he weighed 1600 pounds at first, and now he has gained 100 pounds, and he is feeling good, and he moves right along in a straight line movement, and has some style, he is ready for work, is developed, and is ready to sell, and he is ready for the exporter, and if anybody catches me selling him for less than \$150 I will make him a present. It costs no more to raise a good horse or cow than it does a poor one. Every horse should be bred to a purpose. Find out what sells best in the market. This is the day of education, and the farmer needs the education just as much as the business man. Show me a man that makes a study of the horse, show me a man that makes a study of producing beef, and I will show you a man that is a success in the business. Now I would not advise any man to go into the horse business unless he first loves the horse, and if he loves the horse he will surely arrive at the conclusion that the kind to make the dollar out of are the best horses and the best grades. If he is a smart man, a man of good judgment, he will draw his own conclusions, and those conclusions will be pretty near right. Let us let our light shine. Let us try to teach the men who are looking after wisdom, and trying to be successful, how to use the most successful methods."

The speaker was asked if he did not think there was danger of overdoing the horse business again.

"No; not the least particle," said the speaker. "The reason of the former decline in prices was that people bred anything, no matter what, and ran the grade of horses down, and this poor class of horses will never be worth much, but I do not believe the demand will ever be filled for No. 1 horses. Said the foreign countries were depending on us for their horses. All but eight of the states here are buyers. It seems to me that we have hardly good horses enough for our own market. There is no question but that there is a great famine in this line upon us and will overtake us soon. But there is no demand for little horses only in the south, and they will not sell for a reasonable price, not over \$30 or \$40. If you go into the carriage establishments in the large cities you will see no buggies such as were used a few years ago. The rigs they are turning out are vehicles that require a horse that stands 16 hands and has weight with it."

The discussion that followed was taken part in by Mr. Ware, Mr. Smith, Gaston, Kerrick, Williams and others, after which meeting adjourned to 10 o'clock a. m, tomorrow.

STATE HOUSE, SUPREME COURT ROOM,
January 21, 1898, 10 o'clock A. M.

The Association meeting was called to order by the Vice-President, Mr. John Kincaid in the absence of the Chairman.

The Chairman suggested that they proceed with the question for discussion, "Marketing Fat Stock."

Mr. Ware, Champaign county:—"We are making arrangements for the State Farmers' Institute to be held at Champaign. The committee is preparing a very excellent program indeed. The most successful agriculturists and stock breeders in the United States will doubtless be there. I hope everybody will make it a point to attend these State meetings. The Institute will be held in the University Building on February 22, 23 and 24.

M. J. Hudson, Moweaqua, was called to the chair.

The Secretary then read a paper prepared by Mr. Hallowell of Chicago.

MARKETING LIVE STOCK.

By A. C. Hallowell, Chicago.

You remember the sweet girl graduate, who said to her companion, "Why George, what a sweet little cowlet that is." He said, "You are mistaken, my dear, that is a little bullet.

Now, judging from results, one might think that many men in the business of marketing live stock knew as little about it as the sweet girl who didn't know the difference between a cowlet and a bullet, but after all, the business in that respect is about the same as others.

First of all, it is important to know fat stock when you see it, to know how it should be handled and how it will grade on the markets of the country. To accomplish these results it is necessary to bring to bear the same study, experience and careful business management as is required to gain satisfactory results in any other line of work.

As "good wine needs no bush," so good stock exactly suited to the wants of the trade needs very little booming. It makes a wide difference in net results whether a man has stock which a dozen buyers are anxious to get or stock which only one can be coaxed to bid on.

If a man has decided to change his breeding stock, it is better for him to shut his eyes, load up the whole "shooting match" and let the salesman at Chicago do the rest.

It is human nature to give credit where all the conditions are favorable and criticism when a good man has made the best of a bad situation. Wise men are glad to learn by the experience of others but they know the dangers of following blindly some one else's plan.

Don't try to copy anybody for the one you copy may just be finding out he is wrong. Each one must work out his own salvation in his own way. Two friends were out riding. The good natured little fat man, who was driving, found himself in a narrow road with a very slow team blocking his way. After waiting a little while, he shouted out good naturedly, "Well, well, I should think a good looking man like you, with whiskers all over his face would know better than that." The man grinned and turned out to let the buggy go by. "That's a good thing," said his slim, sad-faced companion, "I am often bothered that way and will remember your scheme." So he did. The next time he was driving he had a chance to test the efficacy of another man's way. "Come, come," said he, "I should think a smart looking man like you would know better than to keep anybody blocked this way." "Blankety—blank—you" replied the teamster, "if you don't shut up your jaw, I'll get down and give you a swift kick in the pants."

A stockman who is always waiting for the best of it usually loses more than he gains. Those who take the bitter with the sweet as it comes, usually last longest. A lucky sale or purchase sometimes spoils a man's judgment for some time to come.

It takes a better man to let go in time to make only a small loss on a tough market, than to get a long price for fancy stock on a booming market.

Don't overload in any kind of weather. It is a poor way to try to keep even with the railroad company. Much depends on careful loading, good bedding and care in transit. That is why the railroads should not think of making it more difficult for owners to have trusty men in charge of stock. Yelling and hooting at the chutes in loading and unloading is responsible for many a costly bruise and much waste in shrinkage.

Other things being equal, uniform colors are an advantage in the market pens and the darker colors are apt to show least dirt. Anything that adds to the uniform appearance of a bunch of animals is helpful, therefore, dehorning, aside from giving better results in the feed lots, in the cars and in the freedom from bruises at market, is a good thing. Experienced men in market-

ing good sized bunches of stock find it helpful to separate the colors, especially if there may be a load or so of white faces or black cattle among Short-Horn grades.

When it comes to the final test of all market stock, however, the matter of color and pedigree get no consideration in casting up the scale of points. Among the cattle breeders there will be advocates of this breed or that strain or the other cross, with here and there a few following Col. Moberly's excellent advice in breeding for beef of breeding "straight, crooked and cross-wise" to get the best individual merit, but the butcher's block is no respecter of pedigrees or peculiar breeding fancies, and is just as likely to declare in favor of a snow white Clarence Kirklevington as an aristocratic red or roan. Like the brook, it may be said that breeds may come and breeds may go, but the court of last resort for all, the butcher's block, goes on forever.

The markets require a very different class of animals from those most popular a decade or so ago, and those who are interested in marketing fat stock must give heed to these changing conditions and demands. Utility and serviceability are now the governing factors. The traditional heavy English bullock gives way to one that weighs little more on the hoof than the old fashioned one did on the hooks. The monster fat back is out sold by the "long lean bacon" hog and the mutton sheep of today must produce very different results from the "boot leg" that used to pass current for mutton chops.

The live stock fashions are chiefly based upon common sense. Truly, one might as well be out of the world as out of fashion, and the saying applies with more force to those who market fat stock than to the silly butterflies who wear birds, or furs or flowers, according to the dictates of the dealers in head gear and dress goods.

Mr. Moffatt said he had not come to talk on that line but came to listen to others and learn from them. Had been engaged in raising cattle from his earliest recollection, but had been breeding the more leading breeds of beef cattle. Said his first experience was with short horn cattle. His father came from the district in England where Short-Horn cattle originated. Said they used to be called Durhams, but their name had been changed to the one they now bear. Said they were a magnificent cattle as a breed, but now I am a Hereford man. As I have said the Short-Horns were a success and I am satisfied that they would be a success in every man's hands that would make good selections and judicious crosses. At one time I was prejudiced against the Hereford cattle. Several years ago the Hereford question came up. It was at a public sale which I attended. I supposed that on some of the cattle offered you could scarcely get enough money to pay the shipping expenses. My idea was to convert them into greenbacks, I did not want the white-faced cattle. Now I am going to take up the history of my experience. I went down to the stables and I was satisfied that the owner was right and bought them. Now, when we got these cattle down in Illinois I was greatly taken with them. These cattle were a great success. I was never more surprised in my life. I was very much pleased with them and I am today, most assuredly, a "white-faced cattle" man. We think they were a success in our grassy fields but I believe they were a success on those great grass growing plains to the west we have heard of. I do not want to occupy your time in the matter of my experiences, therefore I beg to be excused. If you wish to ask me some questions I will readily answer them to the best of my ability.

Col. Fulkerson: I am sorry that the gentleman has fallen from grace in this business, but I will say this in his favor. The Hereford are good, heavy beefers and no denying that fact. I have had very little experience in feeding and fattening cattle. My experience has been confined to raising these little "cowlets and bullets." When my brother and I had a ranch out in Arkansas he bought Texas cows and I Short Horns. When we sold our first calves in Kansas City we gave it up. We went on four or five years and we actually dropped the Short-Horns and took the Hereford. They are the best for the ranch every time, but inside the fence where the farmer has to combine beef, butter and milk there is nothing to equal the Short-Horn.

Mr. Moffat said that his farm was the birthplace of one particularly high-priced Short-Horn animal, sold to Mr. Jones, that was spoken of. He said: "Her place of birth was on our farm, but she was raised by another man, but we still take some credit as to this grand, good, young thing. The credit is reflected upon the man that brought her as well as took care of her. I rather rejoiced in the thought that she reached that \$800.00 mark, and say today that I feel a little encouraged." He then went on to say that he was interested in good beef wherever he went. He said it was the good grade of meat that the commission men could sell. It was that kind the farmer could feed with some measure of profit even when feed was dear.

HOG BREEDING.

Chairman stated that they were taking up the time of the men who were to speak on the hog question and that he thought that they should now give them a chance.

Mr. Fred H. Rankin, of Athens, then read a paper on the subject of "Hog Breeding and Feeding."

A short discussion then took place on the paper read. Col. Mills and Col. Fulkerson then discussed the question concerning the Tamworth hog.

Mr. Thos. Hudson, Moweaqua, Ill., said his father came from the locality where these animals originated. He said his father talked very strongly about bringing out some of them to this country. He said they were considered by his father to make very fine bacon.

Col. Fulkerson said: "We do not need the Tamworths for we have a better breed of hogs right here. We do not need to go after the Tamworths."

Mr. Rankin said to let the people outside of the corn belt raise the Tamworth, but that those within it had no use for that breed. It was not the breed for them. He said that he supposed that if he was not within the corn belt he would take a different view of the matter.

Mr. Hudson inquired concerning the different kinds of feed that he gave to his hogs during the winter.

Mr. Rankin said he had had no experience with any new kinds of feed. He said he would give them corn once a day and then have them take plenty of exercise. He said he fed many sugar beets this year and that he thought a good deal of them as a food for hogs. He then went on to explain the manner in which he cared for them and planted them. First he prepared the ground thoroughly and then he planted about five pounds of the seeds per acre and sowed it fairly thick. When thinned out they were about six or nine inches apart, and that he then went over it and cultivated it three times and then went over it with the field hoe. Thinning is the hardest part of the sugar beet industry. He said the cultivation was but a very small item. It took his man and himself quite a length of time to care for them. He said they fed them to the hogs and considered them very good for that purpose. He said the hogs would first eat the tops in preference to the roots. Some suggested that they would be apt to rot, but Mr. Rankin said that they would be more liable to rot when the tops were cut off than when they are twisted off. He said they needed the same care and treatment as the other varieties of beets. In the kind he raised there was from seven to ten per cent of sugar. He thought more of them could be profitably raised than now are. They average about two feet in length.

Mr. Moffat thought a good way to plow them out was to remove the mould board. He then told about the quick work of some of the Scottish peasants. He said while our men would take two days to plow an acre these peasants would be able to hoe it in one day. He thought that the garden cultivators could be so adjusted as to dispense with a great deal of labor.

The chairman then asked Mr. Rankin a few questions relative to the sugar beet.

Mr. Moffat thought these peasants would accomplish a great deal more than the ordinary men that do hoeing in this country.

The chairman said that the only experience he had had was the planting of the seed of the sugar beet and that they had turned out to be of no account. He said that out of the large number of seeds he had sown but a comparatively small number had come up.

Mr. Hudson had some experience with mangles and told in what manner he treated them. He said in order to keep them from freezing he covered them with a coat of manure.

Mr. Rankin then told how to store them for the winter. He said to put them into a pit, a long narrow pit.

Mr. Moffatt said every farmer would have to build a little house if they went into the beet raising business. He did not think the pit would do. It was necessary to build one that would turn the frost and one of easy access.

The Secretary read a paper from Mr. George Allen.

PUBLIC SALE OF PURE BRED STOCK.

By Geo. Allen, Allerton, Ill.

Selling pure bred stock, whether at public auction or by private treaty, is and will remain one of those weighty business affairs, which in the nature of things comes under a code of unwritten laws, the principles concerned generally enforcing and expounding this unwritten law and the interpretation thereof according to their intelligence and conception of moral and legal obligations. For ourselves we much prefer to act on the golden rule, or as near as human nature can conform to that rule, believing such a course broadens and strengthens business relationship, ameliorates life's trials, "broadening down from precedent to precedent," gradually but assuredly increasing the volume of business more safely upon a lasting basis than any other course that can or may be attempted. In contrast to such a course of procedure we state frankly, as the result of our observations, that no breeder worthy of being admitted a member of any of our Live Stock Associations, can with impunity pursue devious paths. Slow as the day of reckoning may be it will overtake him.

Under our present conditions selling pure bred cattle means selling such stock for breeding purposes. Breeders who wish to retain and increase patronage should guide themselves accordingly, breeding and handling only good sorts, well equipped from their breeding and previous handling to ensure satisfaction to their patrons. While there is little or no difference of opinion as to what is considered good breeding condition, there is a wide and varied difference in the methods adopted by breeders in their preparation of stock and the condition they are presented in on sale day. Our own opinion is that it would be better for all concerned were purchasers fully alive to the merits of stock without making it almost compulsory to fatten beyond the point generally termed "good breeding condition." As an offset to such condition becoming popular breeders should be careful in feeding only such feed stuffs as are best suited to promoting thrift and future usefulness in the stock exposed for sale.

As a necessary condition to confidence and good faith, as well as enlisting the good will of patrons, there should be a clear and concise statement of facts made relative to know defects before bidding begins on any lot exposed for sale.

Advertising is a necessity. Just to what extent this ought to be done must be determined by each breeder for himself, yet we believe that liberal advertising in journals that have proven, by able and steadfast devotion to the breeders' interest throughout the country, is a duty we should cheerfully perform without "cheeseparing" hints for concessions on one side, or special pleading on the other, to paint our stock in such rose hued language as will ultimately stultify the obliging journalist and the designing breeder.

My conclusions are that public sales are advantageous, both to buyer and seller alike. They bring us face to face with one another—dispelling any preconceived ideas concerning fictitious values—placing all on an equal footing

for getting what they want at their own price. Besides this, such sales are instructive and tend to getting men with mutual interests better acquainted, as well as inspiring a common and more general interest in breeding, raising and developing pure bred stock of all breeds.

Secretary also read a paper from Mr. James Maxcy upon the same subject.

PUBLIC SALES.

By James H. Maxcy, Pasfield, Ill.

The selling of pure bred stock at public auction has become so common, and the custom has attained such popularity within the past ten years, that it seems hardly worth while to repeat the advantages of the practice, as most of our hearers have had experience which will far outweigh any suggestions that I may offer.

The first thing about which the would-be seller is to be cautioned is absolute honesty in every particular. Although it is said, and very truthfully too, I think, that as a class the breeders of pure bred stock take very high rank for upright dealing in their several localities, and in my experience in the sale ring, aggregating some 20 years, the breeder who employed other than the fairest methods in dealing with his customers has proved a very rare exception.

Further, to sell successfully one must have good stock. Here, as everywhere else, the maxim "The best is none too good," holds true. Pedigree, while all right in its place, should be held second to individual merit. Nothing but the tops of the herds and flocks should be offered at public sale. The breeder who fails to give his stock the best possible care and bring it to the sale ring in full bloom is not doing his duty by himself, his stock or his brother breeders. Each consignor to an auction sale should give his whole time and attention to the fitting of his stock, not only as a matter of personal pride, but of profit and as a means of advertisement as well. Other details will present themselves for adjustment as sale day approaches.

The selection of some well located point, easy of access by railway, with good hotel accommodations for prospective buyers, all tend to draw the crowd, but I have often doubted the propriety of furnishing free hotel accommodations as an inducement for persons to attend the sale. I have heard of one case where a hotel bill of more than \$300 was settled by a man who held an auction sale at the Illinois State Fair grounds, and I am bound to say that I very much doubt if he got value received.

The great advantage gained by sale at auction, in my judgment, is the opportunity offered the bidders of comparing different individuals by close inspection. Further, one gets the benefit of the judgment of other breeders as to the value of the stock offered. The seller disposes of his stock all at once, whether for cash or credit, and knows just what he has left after paying expenses, he gets his money in bulk and can make his arrangements accordingly. Another pleasant feature of the public sale system is the meeting of large numbers of breeders from different localities who, although strangers before, may thus become acquainted to their mutual advantages. I recall some very pleasant memories of associations with gentlemen whose acquaintance I have formed while on the sale circuit.

Some drawbacks to the system of selling at public auction may be mentioned. There is a temptation to include animals of mediocre merit. This should not be done. Send all second class animals to the general market. They sell there for just what they are worth, no more and no less, while if included in an offering of breeding stock, the prices of better individuals, the enthusiasm induced by association with a large crowd and, shall I say it, the eloquence of the auctioneer, conspire to raise prices for inferior animals to a higher level than is justifiable, and the buyer of such animals is sooner or later displeased with his purchase.

Another objectionable feature of the auction sale is the credit system. The usual credit ranges from 6 to 12 months without interest, although I note with pleasure that a great many offerings are now made on shorter credit with interest from date, accompanied with a liberal discount for cash, which is in the

buyer's favor, and I often think if a buyer fails to take advantage of such terms by paying the cash that man's financial condition will bear looking after and it might be better for him if he had let the stock alone. Another abuse has grown up in a certain line of stock. A crowd of men making it convenient to attend the sales of an entire circuit and buying from each other, and when pay day comes adjusting their balance by swapping notes. This custom must of necessity be short lived, but the participants seem to get a deal of amusement out of it while it lasts.

The mail bid practice is another outgrowth of this system, which is liable to abuse in the hands of men whose consciences are the least bit elastic, but like the other, this will right itself, for, as Mr. Lincoln said, "You can fool everybody part of the time, and you can fool some people all the time, but you can not fool everybody all the time." There are, to be sure, times when intending purchasers can not possibly attend the sale at which they hope to buy, and here the mail bid is a great convenience; but too much care can not be taken to guard the interests of the absent bidder.

Another feature which would be amusing if it were not ridiculous is the numerous crop of Colonels which has sprung up during the past three or four years and who conduct auction sales. What advantage this is, I for one fail to see; but this has come to stay, and in case of another war those persons who attain the distinction of commanding a regiment will find their distinctive cognomen too common to be of any use or honor, as they will be entirely eclipsed by the numerous corps of auctioneers.

Col. Mills said he could not add anything to the two papers read, in favor of public sales, but it was his opinion that public sales were the best agency that could be employed for the disposition of surplus stock. The best way for the stock breeders to gain recognition is to arrange for a public sale and advertise the same thoroughly. Breeders find that the correspondence after a public sale brings in orders that far more than make up the cost of advertising a public sale. In other words, the advertisement received through the sale lead to extended acquaintance and results in more subsequent sales than the original number offered at the sale. The advertisement of a public sale would last for a term of years and lead to extended trade. The essence of success in matter of live stock breeding is summed up in the ability of the breeders to sell his surplus at a profit. If the breeder can not sell at a profit there is no inducement for him to go into the business.

Col. Fulkerson said, when a person goes into the public sale business, he is liable to have many experiences. Sometimes you spend a great deal of money advertising in prominent papers, and get no returns, and other times you advertise in little county papers and have grand success.

Mr. J. H. Pickrell said that a great deal depended on the condition of the animals, and the condition of the weather had a great deal to do with public sales being a success. Take a nice, bright day, and a man will bid more, no matter who he is. Take it about the first of June, when he is expecting to raise a big crop that year, and he is ready to bid. And another thing, I never had any by-bidding at any sale I ever had. People came there and took their stock at satisfactory prices to both. In this way you know exactly what you have left.

Mr. Fulkerson said he had had an interview with Mr. Funk, and said the live stock men should have the lion's share of the appropriation provided for agricultural exhibits at the Omaha Exposition, as it would take a great deal to get them forward and back. Said he had gone to see Mr. Dunlap, but he was just leaving and had no time to talk to him. Mr. Funk will try to see the other members of the commission and get all he can for us. Mr. Funk did not think they could get two thousand dollars, but would do the best they could. Said they were very much in the same condition that they were during the World's Fair.

They were not allowed to have an Illinois day, nor separate stables for Illinois cattle, so they could not do anything that they wanted to. He spoke of the question of dividing the appropriation among the different associations.

He proposed dividing them as follows: 37 per cent horses, 30 per cent cattle, 15 per cent hogs, 12 per cent sheep, and 6 per cent to poultry. We thought this would be the easiest way to give the money.

Mr. Moffatt did not think there was any necessity of giving horses a larger per cent than cattle, as he thought horses could be shipped as cheap.

Col. Fulkerson said they charged a higher rate for shipping horses. He said he had asked Mr. Funk to get more of the appropriation, and he had promised to do so if possible. Fourteen thousand dollars of the money would have to be put into a house, and then some one would have to be paid to take care of it. He said some of the members were trying to get a larger sum than that.

Mr. Rankin wanted to know what they had to publish their reports on. He said there was no possible chance to have the proceedings of the meeting published. He said the Legislature had appropriated \$4,000 for the horticultural industry, and that he thought that if the stockmen would be persistent that in the end they would gain something.

Mr. Grout said it was true that the horticultural people did receive an appropriation to publish their reports, but that they had their regular annual meeting, that they were thoroughly advertised, they had a large attendance, they had a good meeting, and their proceedings were worth reading. He did not think the stockmen had been as persistent in their endeavors as the horticulturists. He said if they could have a meeting, the proceedings of which would be valuable, there would be no doubt but that the Legislature would give money to publish the reports. He thought they would have a meeting here in November that would be worth something, and that they could get the proceedings published. He said his idea was to begin at once and work for that meeting, and secure speakers, and make out the program, and bend their energies to have a good meeting, and in that way to increase the membership of the association. He thought that if this was done they would have no trouble in getting the reports published.

Mr. J. H. Pickrell stated that he thought it would be well for the meeting to appoint a committee to draft papers and to have the association incorporated.

A motion was made that the presidents of the four associations be appointed a committee to draft these incorporation papers.

Mr. Pickrell thought that the poultry men should be consulted and invited to join with them.

Motion seconded by Mr. Moffatt.

Motion carried.

Col. Mills called attention to the report of Col. Fulkerson, concerning the Omaha Exposition, and said the committee should look after the matter still further. He thought two thousand dollars was no appropriation whatever for the live stock interests of the State. It means nothing compared with what the State Board of Agriculture usually divided among these classes of industry. He thought they should have at least \$3,500 for the live stock interests.

He thought it was important that their committee should get hold of the premium lists of the World's Fair and State Fair and look into the matter. He believed in making a good display of live stock at the Omaha Exposition.

Col. Fulkerson said Col. Mills was correct. He said the State Board of Agriculture had nothing to do with the matter at all. He said the committee would make the best fight possible.

Mr. Hudson made a motion that the committee be continued to look after the live stock interests. Motion carried.

Chairman said it was suggested to him that it would be a good idea to have an announcement of the Live Stock Association meeting published in connection with the Fair.

Chairman suggested that the Executive Committee get together and fix the date for next meeting.

Mr. Springer said the Sheep Breeders' Association had been harder hit than any of the Associations, but that the prospects had been getting brighter for some time.

"Feeding and exhibiting pure bred stock."

Mr. Hudson read a paper on the above subject.

EXHIBITING PURE BRED STOCK.

Breeding and exhibiting pure bred stock is one of the most fascinating and difficult tasks the live stock husbandman can turn his attention to. Selecting foundation stock for herd or flock and breeding and fitting for exhibition takes a man with patience, grit and a love for his calling, with plenty of brain and some capital.

For educational purposes there is nothing equal to a fine exhibit of pure bred stock. It shows what each breeder accomplished from year to year, whether he has improved his exhibit or has retrograded. Exhibiting also helps to dispel hobbys. If a person has an ideal that he is working to, and it is good, it is approved and blood from that herd or flock is in demand at remunerative prices, and the achievement is worth all it has cost in patient watching and rearing.

The annual Fair gives farmers a chance to see the best to be had on two continents and it gives breeders and exhibitors a chance to become acquainted and compare notes and animals, and stimulates rivalry among breeders. Some breeders claim it is detrimental to fit a valuable animal for exhibition, but I believe an animal can be fitted and put in the pink of condition, and can be reduced to normal condition without injury to the animal, but it must not be done in a hasty manner, a year being none too long to fit an exhibit of cattle and six months to reduce them and get them back to normal condition.

You will always find a successful exhibitor close to his exhibit or have a faithful attendant who is as much interested in the success of the exhibit as if he was the owner. Nothing makes a better impression on the public than a good display of choice animals, with tidy attendants who are polite and attentive to the public.

Exhibiting is recognized as the cheapest advertising medium we have, and a breeder may stay at home year after year and breed and improve his stock, and if he does not sell to a party who does exhibit he will never be heard of outside his own county. If you have choice pure bred stock, go in to win, if you don't win and you have the award from the ring-side you are more lucky than if you had drawn the royal purple ribbon.

Exhibiting pure bred stock gives men a chance to learn different points in breeding, also a chance to compare our breed with another. It is a pleasure for an exhibitor to come in contact with a man that is trying to learn something about a certain breed of animals to impart as much information as can be given in a limited time.

In conclusion I would say, with all the disagreeable things an exhibitor has to put up with, it pays to exhibit good stock.

The Secretary said he thought exhibiting stock was a good advertisement, no matter whether cattle, poultry, horses or sheep. He knew of no way of advertising to so good advantage as in that manner. He had never gone to a fair for the purpose of exhibiting stock that he did not get more than his expenses.

Mr. Hudson thought it would be best for the committee to get specialists for the next year's meeting.

Chairman said they should make a systematic effort to increase the membership of these various Associations. Thought they ought to get out circular letters urging parties to become members, and in this way thought the membership could be increased to several hundred.

Motion made by Mr. Springer to adjourn to meet on the date to be fixed upon, namely, Tuesday, Wednesday and Thursday, November 15, 16, and 17, 1898, at the State Capitol Building. Carried.

J. H. PICKRELL,
Secretary.

A. P. GROUT,
Chairman.

ANNUAL REPORTS COUNTY FARMERS' INSTITUTES.

The programmes of the meetings of County Farmers' Institutes held in Illinois during the past season contain information of great value to the Institute workers of the State.

The reports of county Institutes furnish an interesting study of the topics receiving attention of the leading farmers in all portions of the State, and contain the names of speakers best qualified in their respective localities to discuss said subjects.

The arrangement of the programmes, the numerous subjects presented for discussion at the county Institute meetings and presented in the following reports will suggest many improvements that can be made in the announcements for future meetings to be held in a number of counties in the State.

The history of the various county institutes is briefly outlined in said reports, which contain not only the time and place of previous meetings but the names of the gentlemen in charge of the late and succeeding institute.

The brief time for collecting photographs and having electros made for use in connection with said county reports has deprived the county Institute workers of the State of the great pleasure of looking into the faces of many excellent promoters of the Institute work in counties that have received great benefit from the holding of such meetings for a term of years.

ADAMS COUNTY FARMERS' INSTITUTE.

The officers for 1897-8 were: S. N. Black, president, Clayton; J. E. Simmonds, secretary, Camp Point; Ed G. Franks, treasurer, Clayton.

It has been the custom to hold two Institutes each year of two days each. The first of 1897-8 was at Golden, October 15th and 16th, and was very successful, with attendance too large for the house.

The citizens of Golden vied with each other as to who should do most for the success of the Institute. Five thousand copies of the proceedings were printed and distributed.

The second and the 22d Institute was held at Clayton on March 11th and 12th in connection with the 15th Congressional District, under the management of the officers named above and the executive committee consisting of Jas. Hazlett, Mrs. Julia Hubbs, O. E. Bryant, Mrs. Anna Smith, E. T. Curry, Mrs. Linnie Wilson.

The following program was rendered: "Welcome Address," J. L. Staker; "Response," J. B. Vandeventer, president of Brown County Institute; "Land Ownership and Titles," S. M. Wallace, Quincy, Ill.; "Husking of the Corn," song, by quartette; "How to Increase a Foreign Demand for Farm Products," E. J. Parker, Quincy, Ill.; "Question Box,"

S. N. BLACK, President.

The evening exercises consisted of selections by the Æolian Quartette, "A Flag Drill" by 16 boys, an address by the Hon. C. J. Schofield, "Smith, Jones and Brown," a drill by 16 girls with shepherd's crooks.

Morning of the 12th: Prayer, Rev. Vandevort; song by the children; a paper on "Insecticides and Fungicides," C. N. Dennis, Hamilton Ill.; "Artificial Incubation," Mrs. J. T. Blaney, Quincy, Ill.; song, "Old Plantation Home," by quartette, Report of Meeting of State Institute, Hon. Geo. W. Dean, director.

In the afternoon: A paper, "Flowers for the Home," Miss Florence Joseph, Camp Point; "The Home Garden," J. B. Frisbie, Mendon, Ill.; "The Sugar Beet, Its Possibilities and Probabilities for This Part of the Country," by Theodore Hopke, "Prices and Prosperity," J. T. Simmons, Quincy, Ill. A large number of pertinent questions were discussed.

Since the Institute there have been published about 6,000 copies of the "Adams County Institute Reports," which have been mainly distributed in Adams, Brown and Hancock counties, the inclemency of the weather preventing other counties taking the part that was desired.

We have endeavored to keep free from all political, religious or personal questions. Have tried to bring all classes together. To have a lawyer tell something about law; a doctor to tell us about hygiene; a banker something on the subject of finance, and so on, that each each may be able to look from a common standpoint and realize the needs of other classes.

We try especially to interest the girls and boys, for they are future farmers. While we keep farm topics to the front, we sometimes think that a man who puts in 360 days thinking of farm work might want a little change on the odd days.

The old officers were re-elected for the ensuing year. The next meeting will be held at Camp Point, November 11-12, 1898.

ALEXANDER COUNTY FARMERS' INSTITUTE.

The Alexander County Farmers' Institute was organized June 21, 1896. The following officers were elected: President, Martin Brown, Sr., Thebes; vice president, A. J. Bunch, McClure; secretary, Jesse E. Miller, Cairo; treasurer, Judge F. Bross, Cairo; executive committee—H. G. Welman, Thebes; Daniel Hartman, Cairo; Wm. W. White, Unity; J. Norman Gale, Thebes; J. B. Anderson, Willard.

BOND COUNTY FARMERS' INSTITUTE.

The last meeting of the Bond County Farmers' Institute was held at the fair grounds, Sorento, Sept. 16-17, 1897, the following officers being in charge: President, J. H. Denny; secretary, J. H. Grigg; treasurer, F. Dressor, all of Sorento.

The following is the programme of the late meeting, Thursday, Sept. 16, 9.45 a. m.:

Music, Elm Point Band. Address, "The Relation of Agriculture to Other Vocations and Its Recognition," Hon. M. M. Sharp. Music, Band. Address, Hon. W. A. Young. Address, L. N. Beal.

1 o'clock p. m.

Address, Hon. Tobias Thacker, Donnellson. Recitation, "Illinois," S. Lee Elliott. Music. Baby show.

Friday, 1:30 p. m.

Address, "Is the County Farmers' Institute a Benefit to the County?" John Hartley, Reno. Address, "Clover," Hon. A. A. K. Sawyer, Hillsboro. Address, "Corn," Hon. E. S. Fursman, El Paso.

The officers elected for the ensuing year were: President, I. H. Denny, Sorento; vice president, E. L. Williford, Old Ripley; secretary, E. P. Gracey; treasurer, F. Dressor; the last two of Sorento.

I. H. DENNY, President.

BOONE COUNTY FARMERS' INSTITUTE.

The annual meeting of the Boone County Farmers' Institute was held in Belvidere, Ill., Tuesday, Wednesday and Thursday, February 1, 2 and 3, 1899. The weather was extremely cold, the worst snowstorm of the winter prevailing, yet the Institute was opened at the tap of the bell, according to programme, with every officer in his place and all committees present. Those who braved the storm and cold will not soon forget their cordial and cheery greeting as they stepped into Adelphi Hall and were made to feel from the start that the farmers of Boone county were fully alive to their interests and appreciated the opportunity of interchange of thought and the good resulting from such meetings.

The meeting was under the following management: President, A. S. Collins, Belvidere; secretary, C. E. Chena, Flora.

The programme was as follows and was carried out to the letter:

FIRST DAY.

10:30 a. m.—Meeting of committees; 11:30 a. m.—Election of officers.

A. S. COLLINS, President.

Afternoon Session—1:30 p. m.

Music; Prayer, by Rev. S. Earnsey; Address of Welcome, Mayor Moore. Response, President A. S. Collins; Music; Resolved, That the life of a farmer offers to the young men of today greater opportunities for personal aggrandizement and profit than any other profession, A. S. Collins, Spring, Ill.; Discussion; Music.

SECOND DAY.

10:30 a. m. Music; Prayer, Rev. T. W. Heyland. 10:30 Who is the Successful Farmer? H. W. Avery, Belvidere, Ill.; Discussion. 11:00 a. m. Music; Farming Compared with Other Industries, Wm. Blester, Belvidere, Ill.; Discussion.

Afternoon Session—1:30.

Domestic Economy, Mrs. C. E. Stockwell, Belvidere, Ill.; Discussion; Poultry, E. H. Cook, Huntley, Ill.; Discussion; Domestic Economy, Mrs. B. H. Herbert, Belvidere, Ill.; Discussion.

THIRD DAY.

10:00 a. m. Music; Prayer, Rev. George R. Pierce. How Shall We Harvest Our Corn, by the Old Methods or by the New? Prof. E. Davenport, State University, Ill.; Discussion. 11:00 a. m. Promiscuous subjects, barring partisan politics.

Note—No person shall exceed five minutes' talk without the consent of the chair.

Afternoon Session—1:30.

Music; Prayer, Rev. J. A. Herrick; Recitation, Master Homer Bowen; The Farm and the Dependent Child, Miss Julia C. Lathrop, Rockford, Ill.; Discussion.

The election of officers for the ensuing year resulted as follows: President, A. S. Collins, Belvidere; vice president, O. S. Cohoon, Belvidere; secretary, George Sayer, Belvidere; treasurer, Frank Leach, Belvidere; executive committee, above named officers.

The next session will be held in Belvidere January 25, 26, 1899.

BROWN COUNTY FARMERS' INSTITUTE.

The first annual meeting of the Brown County Farmers' Institute was held at Mt. Sterling, Ill., Tuesday and Wednesday, December 28 and 29, 1897, with the following officers in charge: President, J. B. Vandeventer; vice president, Oliver H. Perry; secretary, Herbert A. Perry; treasurer, Robert A. Bloomfield; all of Mt. Sterling; executive committee, C. M. Dunlap, Geo. E. Richardson, W. B. Rigg, Mt. Sterling; S. D. Nokes, Mound Station, and Ed. F. Byrns, Scott's Mill.

Much of the success of this first meeting should be credited to the untiring and intelligent efforts of the officers and executive committee.

The program rendered at above meeting is as below:

Tuesday, December 28, 1897—Morning session, 10 a. m.

Song by Hersman Quartette. Invocation, Rev. Konkle. Introductory and welcome address by the President. Response by S. N. Black, President of Adams County Institute, who also delivered an interesting and able address on the topic "Benefits of Farmers' Institutes."

J. B. VANDEVENTER, President

Afternoon session, 1:30 p. m.

Music. Paper, "Clover as a Food and Fertilizer," C. J. Davis, Pea Ridge. Recitation, Miss Nettie Cronin, Mt. Sterling. One of the members of the faculty of the Illinois Agricultural Experiment Station was expected to be present to deliver an address, but was unavoidably detained and the time allotted to him was taken up by the Institute in discussing a variety of subjects of general interest to the farmer. This was followed by the topic, "Farm Labor," which was presented in a very able address by W. B. Rigg, who had had years of experience in the employment of labor on the farm. A general discussion of the subject was indulged in by the Institute. Adjournment.

Wednesday, December 29, 1897—Morning session, 9 a. m.

Song, quartette. Prayer, Rev. Alex McGaffin. Paper, "Soil Management," Jas. H. Hersman. Address, "Agricultural Education," Hon. George W. Dean, of Adams, Ill. Duet, Misses Alta Sax and Florence L. Vandeventer, Mt. Sterling. Paper, "Horticulture," S. D. Nokes, Lee Tp. Discussion was very general on this topic. Paper, "Importance of Veterinary Science," Dr. E. M. Nighbert, V. S., Mt. Sterling. Adjournment.

Afternoon session, 1:30 p. m.

Vocal music by quartette. Question box. Much zest was added to the meeting by reason of the fact that the queries took such a wide range. Recitation, Miss Kate Rose, Coopers-town, Ill. The audience was so delighted with her production that she was compelled to respond to an encore. Paper, "The Farm Garden," J. A. Givens, Mt. Sterling. At the conclusion of the speeches the audience was well entertained with a song by a little tot, Miss Alta McDonnold, who sang of the beauties of the Polled Angus cattle, and did so well that she was called back.

The election of officers for the ensuing year followed, and the President declared the Institute adjourned, *sine die*.

The officers elected were: President, J. B. Vandeventer; vice president, O. H. Perry; secretary, Herbert A. Perry; treasurer, Robert Bloomfield; all of Mt. Sterling.

The next meeting will be held at Mt. Sterling November 9-10, 1898.

BUREAU COUNTY FARMERS' INSTITUTE.

The annual meeting of the Bureau County Farmers' institute was held at Princeton, Ill., on Thursday and Friday, January 20 and 21, 1898, in Apollo Hall, under the following management:

President, Simon Elliott, Princeton; Vice-President, D. P. Smith, Kasbeer; Secretary, L. R. Bryant, Princeton; Treasurer, E. A. Washburn, Princeton. Executive Committee—David Knight, Princeton; W. S. Martin, LaMoille; S. G. Soverhill, Tiskilwa; C. C. Perrier, Sheffield; N. B. Snow, Seatonville.

The members of the following committees contributed greatly to the success of the meeting, viz.:

Committee on Speakers and Program, Reception, Finance, Auditing, Decoration, Publication, Music and Hotels.

The program is as follows:

Thursday, January 20, 1898—10 a. m.

Music.

Prayer by Rev. Derr.

Welcome Address—Mayor R. M. Skinner.

Response—C. A. Willmarth, Director 11th District, Seneca.

Farm Insurance—H. L. Whiting, Tiskilwa.

Appointment of committees, etc.

SIMON ELLIOTT, President.

Thursday—1:30 p. m.

Song—The Dusty Highway, Miss Edith Fidge, Princeton.

The Herding and Management of Swine—G. A. Willmarth, Seneca, Ill.

Small Fruits on the Farm—J. L. Hartwell, Pres. Northern Illinois Horticultural Society.

How and Why I Raise Poultry—Mrs. H. O. Morris, Tiskilwa.

How to Raise Poultry for Profit—H. C. Priebe.

Thursday—7:30 p. m.

Music—Selig's Orchestra.

Transportation—Gen. T. J. Henderson.

Recitation—Sister and I, Miss Mabel L. Imers, Mendota.

Violin solo—Swiss Home Chimes, Miss Edith Fidge, Princeton.

Rural Influences—Mrs. E. L. Gleason, Mendota.

My Bird Songs—Mrs. E. B. Freeman, Princeton.

How to Interest Boys on the Farm—J. L. Hartwell, Dixon.

Vocal selections—M. E. Church Choir.

Friday, January 21—9:30 a. m.

Music.

Prayer by Rev. Putnam.

Reports of committees.

Election of officers.

Clover, Its Culture and Value—C. C. Perrier, Sheffield.

Some Insects Injurious to Corn—S. A. Forbes, State Entomologist, Champaign.

Corn Culture—E. S. Fursman, El Paso.

Friday—1:30 p. m.

The Horse—Hon. John Landrigan, Ex-President State Board of Agriculture.

Responsibility of Milk Producers—J. H. Monrad, Sec'y State Dairymen's Association.

Bovine Tuberculosis and Its Relation to Public Health—C. P. Lovejoy, State Veterinarian.

Friday—7:30 p. m.

Music—Selig's Orchestra.

The District School—Mrs. Elizabeth Keith, Princeton.

Vocal solo—My Father's Half Bushel, H. A. Clark, Princeton.

Better Foods, and Better Methods in Our Homes—Mrs. H. M. Dunlap, Savoy.

Planting of the Apple Tree—Gladys Templeton, Princeton.

Violin solo—Miss Edith Fidge, Princeton.

Farm Homes—E. S. Fursman, El Paso.

Recitation—Miss Mabel L. Imers, Mendota.

Vocal selection—Simons' Quartette.

Final resolutions, etc.

The meeting was a very successful one, as much so, perhaps, as any meeting of its kind ever held here. The following named persons were elected as officers for the coming year:

President—C. C. Perrier, Sheffield. Vice-President—D. P. Smith, Ohio. Secretary—Harry Bryant, Princeton. Treasurer—E. A. Washburn, Princeton.

The next meeting will be held at Princeton, January 24 and 25, 1899.

CALHOUN COUNTY FARMER'S INSTITUTE.

Report of the fourth annual meeting of the Calhoun County Farmers' Institute, held in Hardin December 17, 18, 1897. Owing to the inclemency of the weather the attendance was not as large as desired.

The meeting was under the management of President W. E. Barber, Hamburg and Secretary C. H. Lamar, Hardin.

The meeting was called to order Friday afternoon, December 17, and a very pleasant and profitable session was held. The session was informal and consisted of general discussion, the subject being fruit. Adjourned.

7 30 p. m. Music, Hardin Cornet Band. Address, "Connection Between Prosperous Farming and the Work of the Institute," W. E. Barber. Paper, "The Farmer's Boy and the Country School," M. L. Tremaine. Discussion, by J. E. Watson, Rev. G. B. Smith, S. E. Twitchell and S. E. Barber. The remainder of the program was of a literary and musical character. Saturday morning, appointment of committees on nominations and resolutions. Discussion of topics of general interest.

1:30 p. m. Address, "The Orchard," by the president. Discussed by S. E. Twitchell, Albert Schulze and others. Topic, "Small Fruits," discussed by Mr. Schulze. Paper,

W. E. BARBER, President

"Benefits of Farmers' Institutes," by J. E. Watson. Adjournment.

The next meeting will be held at Hardin under the management of the newly elected officers: President, W. E. Barber, Hamburg; vice president, S. E. Twitchell, Batchtown; secretary and treasurer, C. H. Lamar, Hardin.

CARROLL COUNTY FARMERS' INSTITUTE.

The last meeting of Carroll County Farmers' Institute was held at Mt. Carroll, March 28, April 1, 1898. It was held in connection with the County Teachers Association. The program of the joint meeting was as follows:

Monday 9 a. m., March 28, 1898. Union session 1:20 p. m. Address, by Prof. W. W. Black, University of Illinois, Urbana, Ill.; papers and general discussion on the subject of "Cheaper School Text Books." Monday evening session, 7:30 p. m. Address of Welcome, Supt. J. M. McCallie. Response on behalf of the Farmers' Institute, Hon. D. C. Busell, Milledgeville, Ill. Response on behalf of Teachers' Institute, Mrs. J. E. Laird, Lanark, Ill. Music and recitations.

Farmers' Institute, Tuesday, 10 a. m., March 29, 1898. "Corn Production and its Export Trade," Mr. E. S. Fursman, El Paso, Ill. Discussion led by Geo. Morris, Lanark, and Herman Miller, Chadwick. Tuesday afternoon, 1:20 sharp. A union session was devoted to the "Proper Equipment of Schools." Tuesday evening, 7:30 sharp. Address, Prof. W. W. Black, University of Illinois. Address, "The Farm Home," by E. S. Fursman, El Paso, Ill.

Wednesday morning, 10 a. m., March 30, 1898. Mr. E. S. Fursman opened the session on the subject of "Clover." Discussion led by A. H. Hawk, Lanark, and D. C. Busell, Milledgeville. Paper, "Feeding Calves," by Albert Hartman, Mt. Carroll. Discussion led by Thomas Fritz, Freedom, and Henry Livengood, Milledgeville. Afternoon session, 1:20 o'clock. Address. Papers and general discussion on the subject of "Clubs as Educational Factors." Evening session, 7:30 o'clock. Address, Prof. W. P. McKee, Mt. Carroll. Address. Music, by ladies of the Frances Shimer Academy.

Institute officers for 1898.—President, J. V. Cotta, Nursery; secretary, W. R. Hostetter, Mt. Carroll; treasurer, C. Lamp, Lanark.

Executive Committee—Isaac Gillespie, Geo. N. Melendy, Thomas Jenks, E. T. E. Becker, D. S. Mackay, B. F. Meyers, J. L. Slick, Tobias Shiley, N. Woodin, D. C. Busell, Morris Dyalin, Amos Yordy, Henry Sack.

The next meeting will be held about the middle of December, 1898.

CASS COUNTY FARMERS' INSTITUTE.

The first annual meeting of the Cass County Farmers' Institute was held at the Opera House, Virginia, Friday and Saturday, March 25 and 26, 1898, under the management of James A. Cunningham, President, Chas. W. Savage, Secretary.

The meeting was very successful and the programme rendered was as follows:

Friday, March 25, 1:30 p. m.—Call to order by the President; music; prayer, Rev. A. B. Welch; address of welcome, C. M. Tinney; The Farmers' Institute—What it is and Should be, Col. Chas. F. Mills, Secretary Illinois Farmers' Institute, Springfield; Cattle Breeding, Hon. A. P. Grout, President Illinois Live Stock Breeders' Association, Winchester, Ill.; discussion; The Management of Swine, Geo. Henderson, Virginia, Ill.; discussion; music.

Friday evening, 7:30.—Music, High School Orchestra; recitation, Albert Sims; Household Clubs, Mrs. Frank Bills, Urbana; music, High School Quartette; duet, Mabel and Alice Leeper; Advantage of Chemistry to the Farmer, J. W. Park; music, High School Quartette; recitation, William Gordley; duet, Ida Mae Dunaway and James Phillips; paper, J. N. Gridley; music, High School Orchestra; recitation, Nadine Robertson; duet, Mabel Mitchell and Floy Dunaway; recitation, Louise Conover; Education of the Farmer, B. H. Scudder.

Saturday, a. m., 9:30.—Music; prayer, Rev. Glenroie McQueen; How to Make Farming Profitable, A. C. Rice, Jacksonville, Ill.; discussion; recitation, Miss Cora Musch; Feeding Hogs for Market, Fred Rankin, President Illinois Swine Breeders' Association, Athens; discussion; music; Clover as the Farmer's Friend, W. B. Conover, Virginia, Ill.; discussion; music.

Saturday, 1:30 p. m.—Music; prayer, Elder Guy F. Shields; paper, Reminiscences of the Farm, Wilber T. Hicks, Winchester, Ill.; discussion; recitation, "The Second Trial," Miss Louise Savage, Virginia, Ill.; Best Cultivation of Indian Corn—report of his own experiments on the University farm—A. D. Shamel, Ed. Ill. Agriculturist; discussion; election of officers for ensuing year; miscellaneous business; adjournment.

Following is a list of the officers: President, Jas. A. Cunningham; Vice Presidents, George Stout, Ashland; Robt. Thompson, Arenzville; Homer Decker, Bluff Springs; Wm. Coleman, Beardstown; Jeff Wilson, Chandlerville; David Carr, Hickory; Geo. Massey, Princeton; Hiram Baxter, Philadelphia; W. P. Rice, Virginia; R. V. Stowell, Richmond; Arch Taylor, Oregon; Robt. Knight, Monroe. Secretary, C. W. Savage; Treasurer, Miss Kate Wilson. Executive Committee, Marquis Crum, H. C. Pratt, Geo. Conover, J. G. Fox, Henry Campbell.

The next meeting will be held at Virginia, probably the last of October, 1898.

CHAMPAIGN COUNTY FARMERS' INSTITUTE.

The last meeting of the Champaign County Farmers' Institute was held at the University of Illinois, Urbana, December 14-15, 1897. The meeting was in charge of the following officers: J. M. Love, President, Philo; I. S. Raymond, Vice President, Sidney; J. A. Hosack, Secretary, Champaign; M. A. Dewey, Treasurer, Urbana; Z. R. Genuung, Rantoul; I. S. Peters, St. Josephs; Robert Wright, Mahomet.

This was one of the most interesting and instructive Institutes held in the county. The programme was as follows:

Tuesday morning, 10 a. m.—Opening remarks, Prof. Eugene Davenport; Water Supply for Family and Stock, Prof. A. W. Palmer, U. of I.; Lessons from Short Horn History, F. D. Linn, Class '98; Cattle, Hon. E. E. Chester, Champaign.

Tuesday afternoon, 1:30.—The Town Farmer, his Duty to his Land, M. A. Dewey, Urbana; Management of Farmers' Institutes, Col. Charles F. Mills, Springfield; Farmers' Library, What to Read, Prof. Joseph Carter, superintendent of city schools.

Tuesday evening, 7:30 p. m.—Vocal solo, Miss Edith Stave; The Sanitary Condition of Our Homes, Dr. J. E. Morrison, Urbana; vocal solo, Miss Edith Stave; Home Life in Brazil, Mrs. Prof. Davenport, Urbana; Report of Housekeepers' Association, Mrs. Senator H. M. Dunlap, Savoy; Women and their Work, Mrs. Joseph Carter.

Wednesday morning, 10 a. m.—Different Methods in Corn Culture, A. D. Shamel, Class '98; Variations in Milk, with demonstrations, W. J. Fraser, B. S., U. of I.; Veterinary Clinics, Dr. D. McIntosh, U. of I. Adjournment.

In regard to money matters, we have conducted Farmers' Institutes for thirty years and have used all the following methods to secure the necessary funds: By chipping in, by State appropriation, by advertising for merchants, and on several occasions the Champaign County Fair Association have furnished us the means, allowing us to hold two meetings a year.

The next meeting will be held at Champaign, January 18 19, 1899, under the following management: J. M. Love, President, Philo; J. A. Hosack, Secretary, Champaign; Z. R. Genuung, Treasurer, Rantoul; I. S. Raymond, Sidney; I. S. Peters, St. Joseph; Dr. Chambers, Sadorus.

CHRISTIAN COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Christian County Farmers' Institute was held at the Opera House, Taylorville, Ill., January 19 and 20, 1898, under the management of: President, R. J. Stone, Stonington; vice president, W. T. Baker, Taylorville; secretary, J. W. Hunter, Owaneco; treasurer, G. G. Large, Taylorville.

The program was as follows:

WEDNESDAY, JANUARY 19, 1898

10:30—Invocation, Rev. Best.

Address of Welcome, Mayor E. Bach.

Response, President R. J. Stone. Music.

Topic—"Care and Management of the Horse on the Farm." Opened by Mark Sloan, Zenobia; Dr. Hurlbutt, Stonington; George Wolaver, Edinburg; Sam L. Thompson, Morrisonville; O. R. Fraley, Taylorville; Wm. Lewis, Morrisonville.

Topic—"Raising and Feeding of Cattle for Profit." Opened by Q. I. Simpson, of Palmer, and followed by George E. Maxon, of Morrisonville; Orin Nash, Sharpsburg; E. A. Vandever, Taylorville; E. A. Ponting, Moweaqua; S. T. Hargrove, Taylorville; A. Hebenstreit, Blue Mound; W. D. Coffman.

Topic—"What Branch of Poultry Would Likely Be Most Profitable Under Present Conditions?" Opened by Mrs. Myrtle Martin, of Pana, and followed by T. Hunter, Pana;

Miss Myrtle Leach, Pana; Fred Grundy, Morrisonville.
Topic—"How Can the Prevalent Disease Among Hogs Be Prevented?" Opened by T. B. Hart, of Edinburg, and followed by H. O. Minnis, Sharpsburg; G. Wagoner, of Pana; E. F. Hurlbutt, Stonington; J. C. Richardson, Edinburg; J. Harvey Scribner, Moweaqua; S. D. Cubberly, Kahoka, Mo..

R. J. STONE, President.

EVENING SESSION.

Music.

Topic—"Economy." Opened by Miss Helen Beihl, Alton.

Recitations—By Miss Florence Boyd, Palmer; Misses Caroline Simpson, Maud Temple and Bertha Atkinson, Taylorville.

Piano Solo—Miss Sallie Miller, of Palmer.

THURSDAY MORNING.

Music.

Invocation—Rev. W. W. Weedon.

Topic—"Is There a Practical Plan for Making Roads Passable for Loads at All Seasons of the Year?" Opened by A. E. Boyd, Palmer; E. A. Vandever, Taylorville; W. F. Lowe, Edinburg; R. J. McAfee, Rosemond; John Nelson, Taylorville.

Topic—"Mistakes and Leaks on the Farm." Opened by C. D. Simpson, of Palmer, and followed by D. G. Leigh, Palmer; Sam Wagoner, Pana; J. L. Smith, Stonington.

AFTERNOON SESSION.

1.30—Music.

Topic—"Is Potato Culture Profitable." Opened by S. S. Kanaga, of Taylorville, and followed by Fred Grundy, Morrisonville; J. R. Sharp, Taylorville; O. M. Fultz, Owaneco; Henry Margrave, Palmer.

Topic—"Can Sheep Be Profitably Raised by the Average Farmer?" Opened by George Large, Harry Grundy, Morrisonville; S. A. Shafer, Assumption; A. McTaggart, Pana; I. J. Glass, Sharpsburg.

Topic—"Corn Raising." Opened by B. G. Gray, Blue Mound, and followed by G. W. Tarrant, Taylorville; Sylvester Schrantz, Stonington; Wm. McKenzie, Taylorville.

Officers elected for the ensuing year were as follows: President, R. J. Stone, Stonington; vice president, W. T. Baker, Taylorville; secretary, J. W. Hunter, Owaneco; treasurer, G. G. Large, Taylorville; executive committee, E. A. Vandever and wife, Taylorville; S. C. Wagoner and wife, Pana; Geo. Maxon and wife, Morrisonville; Thornton Hunter and wife, Taylorville; Harry Grundy and wife, Taylorville. The next meeting will be held at Taylorville.

CLARK COUNTY FARMERS' INSTITUTE.

The last meeting of the Clark County Farmers' Institute was held at Marshall, Illinois, on Thursday, Friday and Saturday, January 13, 14 and 15, 1898, under the following officers: President, H. P. Lowry, Martinsville; secretary, J. A. Sweet, Marshall; treasurer, Edwin Henbest, Marshall; executive members—Geo. Fredenberger, Clark Center; J. B. Sheapley, Martinsville; Thos. Craig, Alright; J. F. Murphy, Maxville; B. F. Poorman, West Union. J. A. Sweet and Ora Kilburn assisted greatly in the success of the meeting by securing both instrumental and vocal music for the entertainment of members of the Institute.

The programme of the Institute held January 13, 14 and 15, 1898, was as follows:

Thursday, 7 p. m.

Solo, Frank Cole. Song, Lambdin sisters. Song, male quartette. Lecture, "How to Keep the Boys Interested on the Farm," Prof. Alvin Smith, Clark Center. "Commercial Orchard," H. Augustine, Normal, Illinois.

H. P. Lowry, President.

Friday, 9 a. m.

Called to order by President. Prayer, Rev. Smith. Address of welcome, Jos. Lutz. Response by the President. Reading the minutes by the Secretary. "How to Make the Institute Successful," Austin Sweet, of Martinsville. Adjourned.

Friday, 1 p. m.

Called to order by President. Prayer, Geo. Fredenberger. Solo, Frank Cole. "How to Successfully Breed and Raise Hogs," William Wilson, of Crawford county. "At What Age to Put Off Stock, Especially Cattle, to Obtain Best Results." Discussion opened by Frank Murphy, and discussed by many farmers. "How to Care for All the Details of the Farm," Thos. Craig. Many questions were given and answered by members of the Institute. Adjourned.

Saturday, 9 a. m.

Called to order by President. Prayer, Rev. Tull. Song, Lambdin sisters. "How to Manage One Acre to Raise All Kinds of Fruit for the Family," by H. Augustine, of Normal, and in his remarks he claimed that our land was worth one hundred dollars per acre for fruit alone. Mrs. Richards and Frank Cole appeared with the Lambdin sisters and rendered some fine music, instrumental and vocal. The Institute was next treated to a fine display of farm products. Mr. Austin Sweet had some fine fruit, while many others showed corn, wheat, oats and vegetables. At 10:40 the President called the meeting to order and the following officers were elected for 1898: President, H. P. Lowry, Martinsville; secretary, J. W. Adams, McKeen; treasurer, Jos. Lutz, Marshall; executive board—J. B. Sheapley, Martinsville; John G. Harner, Clark Center; J. F. Murphy, Maxville; Wm. Ditman, Marshall; Chas. Hamil, West Union; vice presidents, one in each township. "Things to Do and Things Not to Do to Make Farming a Success," J. W. Adams. "Raising and Caring for Poultry for Profit," H. P. Lowry. Adjournment.

Saturday, 1 p. m.

Called to order by President. Song, Mr. and Mrs. Richards. Prayer by Jos. Lutz. "In What Does the Success of Farming Consist," Hon. Oliver Wilson, of Putnam county. Adjourned to meet at Marshall next winter, time to be fixed by the executive board. We advertise in county papers, also send letters and cards to all the vice presidents, urging them to get as many to attend as possible. Our last Institute was by far the best that has ever been held in the county. We are striving to put our county at the top.

CLAY COUNTY FARMERS' INSTITUTE.

The first annual meeting of the Clay County Farmers' Institute was held in the opera house in Flora Wednesday and Thursday, February 16 and 17, 1898, under the direction of Joseph S. Peak, Flora, President, and R. A. Ewing, Secretary.

The programme rendered was as follows:

Prayer, Rev. Dr. Giffen, Flora. Address, President Peak. Hon. L. N. Beal, Mt. Vernon, gave a short talk on Organization of Institutes Under a State Law. Discussion, Wheat Raising, A. J. Chaney, J. S. Peak, John Luse, J. F. Finch, L. N. Beal and W. J. Benskin. Corn Raising was discussed by Isaac Logan, John Crown, E. A. Ewen, A. J. Chaney, John Luse, W. J. Benskin, Geo. Hemphill, Isaac Logan and Is. Mills.

Thursday Morning, February 17.

Meeting opened with prayer by Rev. Fred L. Thomson, Flora. Address, Fruit Growing and How to Make an Orchard, Capt. A. Longworth, Clay City; discussed by A. E. Shinn, W. F. Shadwell, J. O. Burton, L. N. Beal, President Peak, Henry Brissendon, F. Wildman, John Shackmann, A. H. Meyer and Mr. Harrell.

Afternoon Session.

Paper, The Need of an Education for the Farmer Boy, Mrs. L. N. Beal. Election of officers. Address, The Raising and Feeding of Cattle, Israel Mills, Clay City. A. H. Meyer spoke on the subject "How to Keep and How to Sell Apples. Poultry was discussed by W. T. Sheets and A. H. Meyer. The meeting closed with appropriate remarks by L. N. Beal.

The officers elected were as follows: President, Jos. Peak; Secretary, A. E. Shinn; Treasurer, A. H. Meyer, all of Flora. Executive Committee, A. H. Reed, L. A. Michaels, L. B. Parsons, all of Flora; Is. Mills, Clay City; John Sullivan, Louisville.

The next meeting will be held at Flora November 23 and 24, 1898.

CLINTON COUNTY FARMERS' INSTITUTE

The first annual meeting of the Clinton County Farmers' Institute was held at Carlyle, Ill., Friday and Saturday, February 25 and 26, 1898, under the following management: President J. T. Donnewald; Secretary, George Johnpeter; Treasurer, Ben Schumacher; Executive Committee, Ben Bond, Gerhard Holtgrave and William Johnston.

As this was the first meeting of the Clinton County Farmers' Institute the attendance was fully up to what the management expected.

The programme of the Institute meeting held February 25 and 26, 1898, is as follows:

FRIDAY, FEBRUARY 25, 1898—AFTERNOON SESSION.

Music. Care and Feeding of Stock, Geo. Vernon. Discussion, Clemens Schwerjohan. How I Raise and Care for Hay, Ben Bond. Discussion, Memphis Crocker. Horticulture and Fruits on the Farm, John J. Bowler. Discussion, Berry Ford. Piano solo, Miss Lillian Gross. Raising an Orchard, paper, Hy Blanke. Discussion, Hy Maddux. How Far is Economy in Taxation Advisable? Discussion, led by Geo. Johnpeter. Adjournment.

SATURDAY, FEBRUARY 26, 1898—MORNING SESSION.

Music. Dairying and Care of Milk, William Hofsommer, Jacob Specht, Ralph Hirschfeld. Why a Farmer Boy Should Have an Education, Profs. Herman Rensing and E. E. Van Cleve. Solo, Miss Bessie Irish. Roads, How Improved, John D. Edwards. General discussion. Spraying the Orchard, E. S. Nichols.

AFTERNOON SESSION.

1:30. Piano solo, Miss Celia Menkhaus. The Nature of Our Soil and the Best Way to Improve Its Fertility, Theo. H. Donnewald. A and B live on adjoining farms; A raises stock peas and soja beans and prospers; B raises wheat, oats and corn and fails; Why? Dr. Robert C. Morris, Olney, Ill. Solo, Miss Nano A. Murray. Question box opened.

The officers elected for the ensuing year are: President, J. T. Donnewald, Carlyle; Secretary, Geo. Johnpeter, Posey; Treasurer, John J. Newkirk, Carlyle.

COLES COUNTY FARMERS' INSTITUTE.

Ever since the organization of the Coles County Farmers' Institute, regular annual sessions have been held. The last meeting was held December 9 and 10, 1897, at the court house in Charleston. Although the weather was very unfavorable the attendance was good, reaching 500 the last day of the session. The last meeting was held under the following management: President, C. R. Doty; Vice-President, W. G. Walker; Secretary and Treasurer, Paul Jones, all of Charleston; Executive Committee, George W. Brewer, Chas. Leitch and W. H. Langston, Charleston; W. G. Wright of Mattoon, and W. D. Smith of Campbell.

The program was as follows:

December 9—9.30 a. m. Music.

Address of welcome by Mayor of Charleston. Response by President C. R. Doty. Is Irrigation Practical?—John B. Hill. The Farm Garden—W. H. Langston. Lessons from Last Season's Drought—C. E. Leitch.

Afternoon session—1.30 p. m.

Music. Methods of Disseminating Local Farm News—J. G. Wright. Most Practical Method of Raising Potatoes—J. P. Jones. Best Forage Crop for Coles County—R. Alexander. Practical Road Making—L. F. Alexander.

C. R. Doty, President.

Second day—9.30 a. m.

Music. Impressions of the Chicago Fat Stock Show—C. R. Doty. Practical Dairying—W. R. Hostetter, Mt. Carmel. Weeds—G. P. Clinton, Botanist of State University.

Afternoon session—1.30 p. m.

Music. Practical Poultry Culture—Mrs. R. A. Judy, Long Creek; Our Country Homes—Mrs. T. N. Cofer, Arcola. Flowers for Home Culture, Their Needs and Requirements—Miss Etta Nott, Charleston. Home Decorations—Mrs. S. E. Ray. Select reading—Mrs. G. M. Walker.

Besides the exercises on the program, the following ladies and gentlemen kindly contributed, for which the management is under obligations, viz.:

Farming Is a Profession—Noble Cofer, Attorney at-law. County Telephones—I. A. Lampkin, Mattoon. Recitations—Prof. Lee, Elocutionist. Reading—Mrs. Dr. Walker. Essay—Mrs. John M. Hays. Beautiful vocal solos were rendered by Miss Hattie Nott and Miss Anna McMichael, the latter furnishing the instrumental music also.

Premiums to the amount of \$25.00, together with several specials, were offered on farm products, drawing a fine exhibit. The awarding of premiums closed the most successful institute ever held in the county. The same officers were chosen for the ensuing year, and the time and place of meeting is Charleston, October 28 and 29, 1898.

COOK COUNTY FARMERS' INSTITUTE.

The Cook County Farmers' Institute was organized at Chicago, February 15, 1897. The following officers were elected: President, Jonathan Periam; Secretary and Treasurer, Charles J. Lindemann; Executive Committee, Charles H. Delton, Andrew Dunning and W. R. Goodwin. Its first meetings were held March 24, 25 and 26, 1897, at the Union Stock Yards and at the Woman's Temple in Chicago.

The second annual meeting was held at Barrington, March 8 and 9, 1898, under the management of the following officers: President, Jonathan Periam; Secretary and Treasurer, Charles J. Lindemann; Superintendent, B. H. Sadt.

The Institute work in this county has succeeded to the full extent of our expectations, and there is still a great deal of work to do. We expect to hold several meetings next winter.

The officers elected for the ensuing year are as follows: President, Jonathan Periam, 826 Englewood ave., Chicago; Secretary and Treasurer, C. J. Lindemann, 145 LaSalle st., Chicago.

The next meeting will be held March 7 and 8, 1899.

CRAWFORD COUNTY FARMERS' INSTITUTE.

The Crawford County Farmers' Institute held its second annual meeting in the court house at Robinson, December 28-29, 1897, under the management of Henry Burner, president, and S. S. Reinoehl, secretary. The program was as follows:

Tuesday, December 28—9:00 a. m., President's address. Music by Harlan Correll. Response by Hon. Geo. N. Parker. 10:00 a. m., "Farm Fencing," by G. W. W. Templeton. Question box.

Afternoon session—1:00 p. m., music. "Should We Begin to Arrange for Pastures Now, and How?" by Hervey N. Richey. 3:00 p. m., "Poultry," by H. L. Barlow.

Evening session—Music by McKee's Orchestra. Paper, "Where Is the Farmer's Interest," D. H. Shank, Paris, Ill. Address, "Corn, Different Varieties," Hon. E. Callahan. Address, Rev. W. C. Swartz.

Wednesday, December, 29—9:00 a. m., Music. "Fruits for the Family," by John L. Watt. 11:00 a. m., election of officers. Question box.

Afternoon session—1:00 p. m., music. Correll Bros. Declamation, Ora Franklin. 2:00 p. m., "Home Adornment," by Mrs. G. N. Parker. 3:00 p. m., recitations, by Lizzie Trimble and Effie Crum.

HENRY BURNER, President

The officers elected were as follows: President, S. S. Reinoehl, New Hebron; vice president, G. W. Templeton, Palestine; secretary, James A. Hill, Robinson; treasurer, John D. Trimble, Trimble.

The next Institute will be held at Robinson, January 31-February 1, 1898

CUMBERLAND COUNTY FARMERS' INSTITUTE.

The Cumberland County Farmers' Institute held its last annual meeting at Toledo, March 9-11, 1898, under the management of P. J. Bowman, president, and A. H. Yanaway, secretary. The program was as follows:

Wednesday evening, 7:00 o'clock—Music. Prayer, Rev. P. Rankin. Address, "Cumberland County," Hon. D. B. Green. Music.

Thursday afternoon, 1:15 o'clock—Music. Prayer, Rev. E. P. Rankin. Welcome address, Clinton Woods. President's address, P. J. Bowman. Music. "Poultry and Eggs for the Market," Mrs. Wm. T. Deppen. Discussion on "Swine," Music. "Draft Horses on the Farm," Music. "Apilary," Clinton Swickard. Music. Discussion on "Cattle," Music. "Small Fruit," Mr. Periam. Music.

Friday morning, 9:30 o'clock—Prayer, Rev. F. M. Ault. "Breeding Thoroughbred Swine," Henry Catey. Music. "Horticulture," Henry A. Aldrich. "Floriculture," Mrs. F. D. Voris. Mrs. James Dryden. "Farmers' Institutes," D. H. Shank, Paris, Ill. Music. "Feeding Cattle for the Market," Samuel Wilson.

Friday afternoon, 1:15 o'clock—Music. "The Farmer's Home," Mrs. O. B. Ely, Mrs. J. N. Barger. "Grass-ae," Jonathan Periam, Chicago. Music. "General Farming," Alfred Kimery, Louis Schie, Eli Bowers, B. N. Holsapple.

The officers elected for the ensuing year were as follows: President, P. J. Bowman, Greenup; vice president, B. N. Holsapple, Toledo; secretary, A. H. Yanaway, Toledo; treasurer, Mrs. Mollie Eckridge, Toledo. Executive committee, P. J. Bowman, A. H. Yanaway, B. N. Holsapple, Henry Catey and Charles Garrett. State delegates, A. H. Yanaway, George Eckridge and D. B. Green. Next meeting to be held at Toledo, January 26-27, 1898.

DEKALB COUNTY FARMERS' INSTITUTE.

The DeKalb County Farmers' Institute was organized eleven years ago at Sycamore, and the interest manifested was never so great as at the one held February 9 and 10, 1898. Mr E. C. West, of Sycamore, was president, and B. A. Williams, same place, was secretary. At the opening session prayer was offered by the Rev. G. W. Rexford, followed by an address of welcome by F. B. Townsend, mayor of Sycamore, which was responded to by Hon. B. F. Wyman. Topics discussed. "H. O. Whitmore discussed "General Farming or Farming as a Business," which was followed by D. A. Syme on the subject of "Special Farming." Mr. H. B. Gurler, of DeKalb, gave one of his instructive dairy talks, and H. B. Farmer, of Chicago, discussed at length the question of "Organization of Farmers." Mr. S. Hill, of Chicago, secretary of the Milk Shippers Union, spoke at length on the subject of "Shipping Milk to Chicago." As thousands of cans of milk are daily shipped to Chicago from this vicinity, a large number of shippers were present.

E. C. WEST, President.

WEDNESDAY EVENING.

The large opera hall was packed to its full capacity. The Sycamore Mandolin Club discoursed sweet music. Miss Nora Farley, of Waterman, sang several songs. Miss Zaida Brown, of DeKalb, gave several whistling solos which were rapturously applauded. Mr L. M. Grass read a paper on "Practical Education." Miss Grace Willmarth gave a humorous recitation, followed by Mr. Sanford Holcomb in a humorous poem on "The New Electric Railroad." Hon. A. F. Moore, of Polo, read an instructive paper on "Fruit on the Farm," and the Hon. B. F. Wyman read a practical paper on "Poultry for Profit."

THURSDAY, FEBRUARY 10, 1898.

Mr. J. C. Blackford presented an interesting paper on the subject of "Cultivation Against Irrigation." D. J. Carned talked on "General Farm Topics," while Mr. E. P. Safford discussed "Hog Cholera," the losses it has caused to the country and the efforts that have been and are being made by the National Bureau of Animal Industry to arrest and control the scourge. Mr. M. Simpleman, of Marengo, talked on the subject of "Fences," describing about all kinds that ever existed. Mr. J. B. Whalen presented a paper on the important subject of "Electric Railways and their Bearing on Farm Life." Mr. H. W. Avery, of Belvidere, read a paper entitled "Practical Thoughts."

Mr. H. B. Gurler, of DeKalb, was elected president, and B. F. Wyman, of Sycamore, secretary of the Institute for 1899.

DEWITT COUNTY FARMERS' INSTITUTE.

The last annual meeting of the DeWitt County Farmers' Institute was held at Clinton, Ill., January 18, 19, 20, 1898, under the management of Jacob Ziegler, President; Chas. Y. Miller, Vice President; S. E. Newell, Treasurer; Edwin Weld, Jr., Secretary; all of Clinton. The executive committee were: Chas. Walker, Mrs. W. W. Newman, Mrs. D. W. Spidle, B. C. Sprague and H. C. Cline.

The program of the meeting held January 18, 19, 20 is as follows:

Afternoon session, 1:30 p. m.

Meeting called to order by President Ziegler. Prayer by Rev. J. B. Horney. Opening address, Judge G. H. Ingham. Response, Prof. B. F. Staymates. Music, Miss Ollie Day. Paper, "Wastes on the Farm," W. F. Hughes. Prize essay on "Farm Life," Mrs. Claudia Cooley. Address, "How Farmers Can Spend Their Evenings Profitably," Prof. S. A. Edwards, Kenney. Discussion led by Mrs. W. S. Harold, Wapella. Paper, "Public Roads," Hon. C. H. Moore. General discussion, John Bryant, John McConnell, Leroy W. Crum, Farmer City, and H. D. Watson.

Evening session, Rennick opera house, 7:30.

Music, Mrs. Nettie Edmiston. Recitation, Miss Laura Tobias, Wapella. Song, Pearl Smith. Song, Gertrude Colwell. Address, "Rural Free Mail Delivery," Prof. J. M. Stahl, Chicago. Duet, Mrs. J. Edmiston and A. R. Pickering. Address, "The Model Farmer," Rev. E. A. Gilliland.

JACOB ZIEGLER, President.

Wednesday, January 19, 1898, Rennick's opera house—Morning session, 10:30 a. m.

Prayer, Rev. M. L. Goff. Music, Ollie Day. Paper, "Farm Fences," W. S. Harrold, Wapella. Discussion, Orle C. Ives, Wapella; E. H. Robb, E. L. Hoffman and John McConnell. Music, Mary Hartsock. Paper, "Diversity in Farming," H. D. Watson.

Afternoon session, 1:30.

Music, Misses Wilson and Jones. Address, "Our Cattle," Hon. L. H. Kerrick, Bloomington. Discussion, M. Crum, Farmer City. Address, "What Horse for the Farmer to Raise," Hon. J. F. Berry, Chicago. Discussion by Capt. King, Normal.

Evening session, Rennick opera house, 7:30.

Quartette, Messrs. McPherson, Rodges, Jones and Davis. Address, "The New Humanity," Mrs. Mary Kuhl, Champaign. Recitation, Linnie Shaw. Address, "The Farmers' Problem," Prof. Arnold Tompkins, Champaign.

Thursday, January 20, 1898, Rennick opera house—Morning session, 10:30 o'clock.

Prayer, Rev. J. A. Clark. Music, Miss Mabel Watson. Address by ladies, on Bread, Butter and Cakes, who took premiums last year, Mrs. S. Wade, Mrs. C. Hartsock and Mrs. Daniels. Original poem, "The Model Home," Mrs. J. M. Burkholder. Paper, "Corn Breeding," J. H. Bigley, Sibley. Discussion by E. S. Hoffman, Waynesville. Essay on "Farm Life," by Mrs. Elizabeth Morris, was read by Mrs. W. W. Newman.

Afternoon session, 1:30.

Sale of corn by G. W. Woy, 1 o'clock. Music, Jennie Wilson. Paper, "Lights and Shadows of Farm Life," Mrs. J. M. Burkholder, read by Miss Burkholder. Address, "Corn Culture," Hon. E. S. Fursman, El Paso. Discussion and question by audience. Music, Miss Burkholder. Sale of cakes, apples, etc., by G. W. Woy.

Evening session, Rennick opera house, 7:30.

Music, McPherson Quartette. Recitation, Lena Henson. Solo, Anna McPherson. Address, "Education of Farmers' Sons," T. C. Grady, Maroa. Recitation, Lena Henson. Recitation, Miss Burkholder. Farce, "Two Little Vagrants"; "Farmer Wax," Guy Hull; "Lucy Wax," Hallie McGraw; Two Tramps, "Rags," "Tatters," Herb Wilson, Dell Crowden. By request, "The Jolly Little Walters," representing the different nationalities.

Officers for the ensuing year are: President, C. Y. Miller, Maroa; Vice President, Jacob Ziegler; Secretary, Frank Cline; Treasurer, Sam Newell; the last three all of Clinton. The next meeting will be held at Clinton January 11-12, 1899. President Ziegler thanked the people for their attendance during the Institute, which closed one of the most successful yet held.

DOUGLAS COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Douglas County Farmers' Institute was held at Arcola Thursday and Friday, January 13 and 14, 1896, under the following management President, John Borkey, Arcola; secretary, Joseph Coombe, Arcola; treasurer, D. C. Callaway, Tuscola. The program of the Institute is as follows:

Thursday morning, 9 a. m.

Prayer by the Rev. Wm. Luce, Arcola. Opening remarks by the secretary. "The Cost of Building and Maintaining Gravel Roads and the Best Method of Paying for Them, Taxation or Subscription," was fully and ably discussed by Wm. McAdams, of Kansas, Ill. A paper was read by the secretary from the office of Road Enquiry of the Department of Agriculture on "Steel Roads, their Cost and Durability." The question of State aid to roads was also discussed. The cost of transportation of gravel from the gravel pits of Indiana, was given in a paper by the superintendent of transportation of the Vandalia Railroad. "Diseases of Farm Animals" was discussed by Dr. V. G. Hurt, Arcola, Ill. "The Kind of Horses Demanded by the Trade," Mel Crews, Arcola, Ill.

JOHN BORKEY, President.

1 p. m. "Corn Culture and How to Market It," E. S. Fursman, El Paso, Ill. "Soil Culture, or How to Build up Your Farm and Not Lose a Crop," Prof. Davenport, Urbana, Ill. Prof. Davenport talked on "Live Stock on the Farm," and demonstrated that the fertility of the farm could not be maintained without the raising of stock.

7 p. m. The house was crowded to hear E. S. Fursman on "Farm Homes and Small Fruits of the Farm."

SECOND DAY, FRIDAY, JANUARY 14

9 a. m. Prayer by Rev. Wm. Luce. Prof. Forbes talked on "Insects Injurious to Corn and the Remedy." "The Extension of the Market for Indian Corn," W. B. Snow of the Orange Judd Farmer, Chicago, Ill. "Farm Orchards," H. M. Dunlap, secretary State Horticulture Society, Savoy, Ill.

1 p. m. Occurred the election of officers and selection of delegates to the State Institute. A paper on "Farm Insurance," Milton George, Chicago, Ill. "Cattle in Central Illinois," E. E. Chester, Champaign, Ill. The next hour was occupied by Wm. Iles of Camargo, in telling us how to profitably feed them. "Broom Corn, How to Market It," was shown in a paper by D. S. Perry, Urbana, O.

7 p. m. To an overflowing house was rendered the joint program by the High Schools of Arcola and Tuscola, presided over by the County Superintendent of Schools, Miss Nora Bunch, Tuscola, Ill. This closed the most successful Institute ever held in Douglas county. The next meeting will be held at Tuscola, Jan. 19-20, 1899.

The officers for the ensuing year are: President, Joseph Hemlinway, Arcola; vice-president, C. C. Jones, Tuscola; secretary, Joseph Coombe, Arcola; treasurer, John Borkey, Arcola.

DUPAGE COUNTY FARMERS' INSTITUTE.

The DuPage County Farmers' Institute held its last annual meeting at the court house, Wheaton, Illinois, Wednesday, Thursday and Friday, February 16, 17 and 18, 1898. The officers having the meeting in charge were: President, C. D. Bartlett, Bartlett, and Secretary, R. T. Morgan, Wheaton. The programme rendered was as follows:

WEDNESDAY, FEBRUARY 16—10 A. M.

Prayer, Rev. Dr. Tompkins. Music, Wheaton High School. Minutes of last meeting, R. T. Morgan. Address of welcome, Mayor Peironnet. Response, Mazinni Slusser. Address by the President, C. D. Bartlett. Paper, Mrs. W. B. Lloyd. (a) Is corn in northern Illinois a profitable crop? (b) If so, what kind would you recommend? (c) The proper methods of cultivating and harvesting it. Discussion opened by Jas. W. McKee.

AFTERNOON SESSION—1:30.

Music, Wheaton High School. How shall we manage the products of the cow in order to realize the most profit from them? Discussion opened by Will Patrick, of Lombard; E. J. W. Dietz, of Downers' Grove, and Conrad Buschman, of Lace. Our Dairy Interests, J. J. Billingsby, President Indiana State Dairy Association, Indianapolis. Recitation, Miss Guild. Paper, Review of the Work of Prof. W. O. Atwater, Special Agent U. S. Department Food and Nutrition, Mrs. M. Slusser. Open discussion: How can farm life be made more attractive, Mrs. H. B. Hill, Mrs. C. B. Blodgett, Mrs. Lillian E. Ballou. Question box, Jona Piper.

THURSDAY, FEBRUARY 17—10 A. M.

Prayer, Rev. Col. Anderson. Music, Miss Elma Bartlett. The Road Problem: (a) How shall our roads be constructed? general plan, H. C. Middaugh; (b) material used, Irving Goodrich and William Hammerschmidt; (c) merits of the cash and labor system, respectively, Philo Stacy and Geo. Fischer. Recitation, Mrs. Edith Bartlett. Music, Elma Bartlett. The Value of Feed fed for Milk the Present Winter, Chas. Pierce. The Value of Feed fed for Beef the Present Winter, C. D. Bartlett.

AFTERNOON SESSION—1:30.

Music, Elma Bartlett. Recitation, Miss Edith Bartlett. Election of officers. Hints on the rearing, care and preparation for sale of the following class of horses—draft horses and horses of all work, Jas. Fletcher. Roadsters, Frank Gorton. The best and cheapest sidewalk to be adopted in small towns: Cement, Mrs. Savage; Brick, Thos. Betts. Paper, Dr. Fry, of Naperville. Drainage, J. J. W. Billingsby.

EVENING SESSION—7:30.

Music, Wheaton High School. Address, Prof. Henry Raab. Recitation, Mrs. Edith Bartlett. Music, Wheaton High School. Recitation, Miss Clara Glos. Our Poultry Interests, C. B. Blodgett. What Fruits can DuPage County Farmers Profitably Raise, J. C. Neltner. Paper, Dr. Olsen. Paper—Engineering and Surveying, G. I. Herrick. Question box, Jona Piper.

FRIDAY, FEBRUARY 18—9:30 A. M.

Prayer, Rev. G. Wood. Music, Miss Elma Bartlett. Recitation, Mrs. Edith Bartlett. Weeds, Wm. Moffatt. History, Purpose and Progress of the Illinois Pupils' Reading Circle, F. A. Kendall. Address, Prof. Henry Raab; Homemade charts and how to use them, Miss Frances Bartlett. Address, M. Quackenbush. Recitation, Mrs. Edith Bartlett.

AFTERNOON SESSION—1:30.

Music, Miss Elma Bartlett. Address, Hon. John H. Batten. The Farm the Basis of our Wealth: How can bright boys and girls be induced to stay on the farm? Alex Forbes. Music, Wheaton High School. Address, Jona Piper. Keeping up with the Procession, D. B. Givler.

The officers elected were as follows: President, C. D. Bartlett, Bartlett; Secretary, Royal T. Morgan, Wheaton; Treasurer, James W. McKee, Eola.

EDGAR COUNTY FARMERS' INSTITUTE.

The third annual meeting of the Edgar County Farmers' Institute was held at Paris, January 25, 26 and 27, 1899, under the following management: President, J. M. Hollingsworth, Ridge Farm; Vice-President, C. W. Clark, Edgar; Recording Secretary, J. O. Honnold, Warrenton; Treasurer, W. A. Coleman, Paris; Corresponding Secretary, Geo. H. Gordon, Paris; Executive Committee, Wm McAdams, Kansas; Geo. H. Gordon and W. A. Coleman, Paris; J. O. Honnold, Warrenton; J. H. Hollingsworth, Ridge Farm. The attendance was large, taxing the capacity of the magnificent court house. Great interest was manifested by all present. The following is the program:

Tuesday evening, January 25.

Music—G. A. R. Glee Club. Address—Rev. H. M. Brooks. Announcements by the President and Corresponding Secretary. Music.

Wednesday, January 26.

Morning session—9:30 a. m.

Singing—"America," Mrs. S. B. McCord's Quartette. Prayer—Rev. A. E. Dubber. Welcome address—Mayor D. D. Huston. President's address—J. M. Hollingsworth. Music. Paper—"Landlord and Tenant," S. F. Honnold, Warrenton. "Farm Management," J. R. Honnold, Warrenton, and D. B. Kelsheimer, Paris. Paper—"Practical Poultry Culture," Mrs. R. A. Judy, Decatur.

J. M. HOLLINGSWORTH, President. 1

Afternoon session—1:30 p. m.

Music—"Planting and Care of An Orchard," with object lessons in pruning and grafting—B. O. Curtis, Paris. Music—G. A. R. Quartette. "Small Fruits for the Farm," with object lessons in pruning bushes—C. C. Harris, Flemington. Violin solo—Miss Teresa Noonan. Paper—"The Farmer's Home," Mrs. Mary Fell, Warrenton.

Evening session—7:30 p. m.

Musical selections by Mrs. McCord's Quartette and G. A. R. Glee Club. Lecture—"Agricultural Education," Prof. Eugene Davenport, State University. Music.

Thursday, January 27—9:30 a. m.

Solo—"Twas Milking Time," Mrs. McCord. Address—Recent Experiments in Cattle Feeding," Prof. Davenport. Illustrated talk—"How to Handle a Bunch of Cattle," C. W. Clark, Edgar. Song—"Old Kentucky Home," Quartette. Illustrated lecture—"The Farmer's Garden," Jonathan Periam, Chicago.

Afternoon session—1:30 p. m.

Solo—"Slumber Time," Mrs. W. T. Cook. Adoption of constitution. Address—"Sugar Beets," Jonathan Periam, Chicago. Solo—"The Old Homestead," Mrs. C. E. Schenck. Address—"Good Roads," Wm. McAdams, Sr., Kansas. Music—G. A. R. Quartette. Paper—"Outlook of Institute Work in 19th District," Director D. H. Shank, Paris. Music—G. A. R. Quartette. Reports of committees and election of officers.

General discussions followed the opening of nearly every topic, and the remarks were prompt and pointed. The Institute closed with a burst of enthusiasm and good feeling.

Officers for the coming year are. President, J. M. Hollingsworth, Ridge Farm, Vice-Presidents, one from each township; Recording Secretary, Mrs. Mary Fell, Warrenton; Treasurer, C. D. Smith, Grandview. Corresponding Secretary, George H. Gordon, Paris; Executive Committee, John O. Honnold, Warrenton; W. A. Pearson, Vermilion; Mrs. L. C. Clark, Edgar; Mrs. E. C. Preston and Geo. H. Gordon, both of Paris.

A Women's Section was organized, with Mrs. L. C. Clark, of Edgar, as chairman. It will hold some special sessions next winter, apart from the men's meetings. It is thought this will enable each meeting to fully and freely discuss topics of peculiar interest to them, and also result in a considerable saving of time. Part of each day's session will be held jointly, as before.

We hope to extend the work into the townships, and to have exhibits of farm products at future meetings.

The next meeting will be held at Paris, January 18-19, 1899.

EDWARDS COUNTY FARMERS' INSTITUTE.

The last meeting of the Edwards County Farmers' Institute was held at Albion, Ill., December 1 and 2, 1897, under the following management: President, Ansel Gould, Bone Gap; vice president, John Gates, West Salem; secretary, M. E. Shurtleff, Bone Gap; treasurer, Joseph Skeavington, Albion. Executive committee, Charles Clark, Wm. Thread, Joseph White, Albion.

The program for the Institute meeting held December 1 and 2, 1897, is as follows:

Tuesday, December 1, 1897. Morning session, 9:30—Music. Prayer, Rev. Trueblood. Address of President. Appointment of committees. Address of Welcome, H. C. Pitcher. Response, H. J. Strawn. Report of Committee on Organization.

Afternoon session, 1:00—Music. "Baby Beef and How to Raise," Robert Kingsberry, Birds, Ill. Discussion, S. S. Seiler, Mt. Carmel, Ill. "The Home Education of Children," Mrs. Robert Lee. Discussion, Mrs. Joseph Skeavington and Mrs. John Landrigan.

Evening session, 7:00—Prayer, Rev. A. A. Benton. Recitation, "The Farmer's Daughter," Miss May Hardy. Discussion, Miss A. B. Hemingway. Recitation, Joseph Hallam. Recitation, J. T. Shurtleff.

Wednesday, December 2, 1897. Morning session, 9:30—Music. Prayer, Elder McCoy. "The Renovation of Our Wornout Lands," Hon. N. J. Colman, St. Louis. Discussion, R. C. Morris, Olney.

Afternoon session, 1:00—Music. "Legislation for Farmers," John P. Stelle, Dahlgren. Discussion, Hon. John Landrigan.

ANSEL GOULD, President.

"The Relation of Education to Agriculture," Prof. Eugene Davenport. Discussion, A. A. Benton.

The next meeting of the Edwards County Farmers' Institute will be held under the following management: President, Albert Fewkes; vice president, Loren Jack; secretary, Walter Rigg, treasurer, Joseph Skeavington, all of Albion, Ill.

EFFINGHAM COUNTY FARMERS' INSTITUTE.

The Effingham County Farmers' Institute held its fourth annual meeting at the court house in Effingham, February 18 and 19, 1898, under the management of J. H. Loy, president, and Wm. Dyke, secretary and treasurer, both of Effingham; vice president, Wm. Blakeley, Altamont.

Mayor Burrell made the address of welcome, and it was responded to by J. H. Loy, the president. R. C. Morris, of Olney, spoke on the subject, "Two Farmers on Adjoining Farms. One Succeeds, the Other Fails, Why?" The speaker brought out the necessity of a change from grain to leguminous crops, such as soja beans, cow peas, clover, etc. A paper by Mrs. Linda Loy on "Phases of Farm Life," was listened to with a great deal of interest.

The evening program consisted of music, vocal and instrumental, under the direction of Prof. Brinkley, of Austin College, aided by R. C. Morris.

Saturday, February 19. Secretary and treasurer's report was read. D. H. Shank, Paris, director of this district for State Institute, read a paper on "Benefits on Institute Work." Jabez Webster, of Centralia, read an able paper on "Impelling Forces and Mistakes in Horticulture." C. C. Harris, of Paris, a paper on "Hard Roads." All the papers were thoroughly discussed and criticised.

The officers elected for the ensuing year were: President, Volney Willet, Hill P. O.; secretary and treasurer, Wm. Hirtzell, Shumway. The president, Volney Willet, has died since the meeting of the Institute. The next meeting will be held January 24-25, 1899.

FAYETTE COUNTY FARMERS' INSTITUTE.

The Fayette County Farmers' Institute was organized June 16, 1898. The following officers were elected. President, J. G. Wills, Vandalia; one vice president from each township; secretary, Geo. F. Houston; treasurer, Dr. R. T. Higgins, both of Vandalia. Executive committee, M. B. Crandal, Vandalia; A. W. Griffith, Brownstown; D. H. Sproul, Vera; S. A. Dean, Pittsburg; J. S. Evans, Vandalia. The next meeting will be held at Vandalia.

FORD COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Ford County Farmers' Institute was held in Paxton January 27-28, 1898. The attendance was large and the interest manifested was very encouraging.

The officers having charge of the last Institute meeting were as follows: President, J. N. Bondurant, Paxton; Secretary, V. G. Way, Proctor; Treasurer, F. J. Johnson, Paxton. Executive Committee, the above named officers and one Vice President from each township. They were aided by a citizens' committee from Paxton.

The following is the programme of the last meeting:

JANUARY 27, 1898. THURSDAY MORNING SESSION—9:30.

Music. Prayer, Rev. G. H. Wilson. Address of welcome, Mayor Cruzen. Response to welcome, John A. Scott. President's annual address, J. N. Bondurant, Paxton. Arrangements of fair exhibits.

AFTERNOON SESSION—1:30.

Music. Address, Cattle on \$100 Land, L. H. Kerrick, Bloomington. Discussion, led by F. W. Beardsley, Gibson City. Address, Clover as a Means to Rest Tired Lands, George Arnott, Paxton. Discussion, led by W. A. McKeever, Gibson City. John Weaver, Loda. Address, The Farm from a Woman's Standpoint. J. N. BONDURANT, President.

EVENING SESSION—7:00.

Music. Prayer, Rev. E. P. Olsson, Paxton. Address, Farmer's Home, Miss Lucy Thornton, Deland. Address, Horticulture on the Farm, J. C. Blair, Urbana. Discussion, led by G. T. Kinsey, Paxton.

JANUARY 28, 1898. FRIDAY MORNING SESSION—9:30.

Prayer, Rev. T. A. Canady, Paxton. Address, Hogs for Quick Money, D. P. McCracken, Paxton. Discussion, led by W. T. Watts, Kempton. Address, Short Term of Agriculture, Frank Bondurant, Paxton. Agricultural class meeting, led by J. B. Foley, Gibson City. Announcement of committees.

AFTERNOON SESSION—1:30.

Music. Prayer, Rev. A. S. Covert, Paxton. Address, Horse Raising for Profit, Senator J. Landrigan. Address, Farm Drainage, John Kenward, Roberts. Discussion, led by H. Diers, Sibley. Address, How to Grow 160 Bushels of Corn to the Acre, E. S. Fursman, El Paso. Discussion, led by J. H. Beagley, Sibley. Reports of Committees on Awards. Report of Committee on Election and Location. Appointment of Delegates to the State Farmers' Institute.

FRIDAY EVENING.

A literary and musical entertainment by the Paxton public schools and Rice Collegiate Institute. Music by the best musical talent of Paxton and vicinity.

The officers for the ensuing year are: President, T. J. Sowers, Piper City; Secretary, H. C. Carpenter, Piper City. Treasurer, Geo. Arnott, Paxton.

The next Institute will be held at Piper City January 12-13, 1899.

The Vice President from each township was requested to send subjects he would like presented at the Institute to the meeting of the Executive Committee and the topics for programme were selected from these. Our meetings were advertised in the county papers and by each Vice President mailing and distributing programmes. The expenses were met by subscriptions from the people in the town in which the Institute was held. The exhibits consisted of farm and dairy products, cooking and needlework.

FRANKLIN COUNTY FARMERS' INSTITUTE.

The fifth annual meeting of the Franklin County Farmers' Institute was held at the opera house, Benton, March 24-25, 1898, under the following management: President, C. M. Dixon, Parrish; vice president, J. Marshal Jones, Benton; secretary, W. L. Moore, Parrish; treasurer, C. Moore, Benton. The following program, with only a slight change, was carried out:

Thursday, 10:00 a. m.

Music, Benton High School Quartette. Prayer, Rev. F. A. Sword. Welcome address, Mayor, city. Response by President C. M. Dixon. Paper, "The Farm and How to Keep It," by C. M. Dixon. Discussion, Institute.

Thursday, 1 p. m.

Paper, "Rotation of Crops," by Wm. Hutchinson. Discussion, Institute. Paper, "Education of the Farmer Boy," by Capt. J. A. Coleman, Frankfort. Discussion, Institute. Owing to condition of the weather there was no evening program.

Friday, 10:00 a. m.

Our regular morning program was deferred until evening for the purpose of hearing papers from Mr. and Mrs. L. N. Beal, of Mt. Vernon, and Mr. G. A. Wilmarth, of Seneca. The above parties being compelled to leave us on the noon train for White County Institute. Paper, "Education of the Farmer Boy," by Mrs. L. N. Beal. Excellent. Paper, "Growing and Management of Swine," G. A. Wilmarth, Seneca, was listened to with great interest. Paper, "Horticulture," L. N. Beal, Mt. Vernon. Of course Mr. Beal's paper was listened to with great interest as Mr. Beal has been with us annually ever since our Institute was first organized and he has many warm friends among us. He is always welcomed.

Friday, 1:00 p. m.

Music, Quartette. Paper, "Importance of Good Roads to the Farmer," Jno. Mulkey. Discussion by M. P. Clayton, Benton. Paper, "How to Raise Wheat for Profit," Wm. Ruemmler. Discussion, Institute.

Friday, 7:30 p. m.

Music, Benton choir. Prayer, Rev. Edmunds. Reading of prize essays. Music, instrumental. The remainder of the evening programme consisted of recitations, declamations, etc.

The officers for 1898 are: J. Marshal Jones, Benton, president; Wm. Hutchinson, vice president; W. H. Doris, secretary; C. Moore, treasurer; C. C. Payne, C. Moore, Wm. Ruemmler, executive committee. Our next meeting will be held at Benton.

FULTON COUNTY FARMERS' INSTITUTE.

The Fulton County Farmers' Institute was organized July, 1898. Officers were elected as follows: President, John Prickett, Lewistown; Vice President, James Neville, Canton; Secretary, Henry Rice, Lewistown; Treasurer, Henry P. Bordner, Lewistown; Executive Committee, Charles Camp, Astoria; H. D. Zoll, Table Grove; C. C. McCutcheon, Canton; W. H. Rose, Avon; J. A. Jameson, Canton.

GALLATIN COUNTY FARMERS' INSTITUTE.

The second annual session of the Gallatin County Farmers' Institute was held at Ridgeway December 15-17, 1898. It was a very interesting and profitable session and was under the management of President Harry Ives and Secretary Geo. Hanlon, both of Shawneetown. The program of the meeting was as follows:

Wednesday, December 15, 1:30 p. m. Prayer, Rev. R. M. Davis. Address of welcome, Hon. W. S. Phillips. Response, Hon. H. P. Bozarth. Address, J. M. Bowling. Discussed by Messrs. Hilner, Beal and others.

Evening session. Paper, "Why a Farmer's Boy Should Get an Education," Mrs. L. N. Beal, Mt. Vernon. Address, "How Can the Farmer Bring About a Betterment of His Social Life," Dr. Robert C. Morris.

Thursday, December 16. "The Difference Between a Flesh and Grain Raising Farm and Why?" Discussed by Robert C. Morris. Paper, "Live Stock Sanitary Legislation and Contagious Diseases of Animals," Hon. C. P. Johnson. Address, "Wheat Raising," Dr. Daniel Berry.

Evening session. "The Physiology of the Mind, or the Mental Development of Children," Dr. Daniel Berry.

Friday, December 17. "Forage Crops or Sanitary Management of Swine," discussed by J. E. Seilor, Mt. Carmel. Address, "Maintaining the Fertility of the Soil," Arthur P. Henderson, Ellery. Address, "What Farmers' Institutes Are Doing for the Farmer," L. N. Beal, Mt. Vernon. Each of the above topics were discussed by the Institute, bringing out many valuable points of interest. Several topics were crowded out for want of time.

The officers elected for the ensuing year were as follows: President, Harry Ives; Secretary, Geo. Hanlon; Treasurer, W. A. Peeples; all of Shawneetown.

GREENE COUNTY FARMERS' INSTITUTE

The last annual meeting of the Greene County Farmers' Institute was held at Roodhouse, Illinois, Tuesday and Wednesday, February 1 and 2, 1898, under the following management: President, C. W. Holnback, Rockbridge; vice-president, John H. Stubblefield, White Hall; secretary, S. E. Simpson, Carrollton; treasurer, B. C. Hodges, Carrollton; executive committee, E. M. Husted, John E. Morrow, W. C. Roodhouse, all of Roodhouse.

The members of the following standing committees contributed greatly to the success of the meeting, which was one of the best ever held in Greene county, viz.: finance, music, reception and entertainment

The program of the Institute held February 1 and 2, 1898, is as follows: Tuesday, February 1, 1898, morning session, 10 o'clock a. m., organization, Appointment of committees. Miscellaneous business

Afternoon session, 1 o'clock. Orchestra. Prayer. Welcome address, D. F. King. Response, C. W. Holnback, president Greene county fair. Instrumental music. "Profitable Cattle Feeding," Hon. A. P. Grout, Winchester. Discussion. Music. Adjournment.

C. W. HOLNBACK, President.

Evening session, 7 o'clock. Orchestra. Prayer. Quartette, Mesdames Anderson and Hardin, Messrs. Savage and Silloway. Reading, Miss Grace Moore "Poultry," C. W. Holnback. Discussion. Male quartet. Reading, Miss Lucy Jones "Sheep Husbandry," F. D. Moulton, White Hall. Solo, Mrs. E. E. Anderson. Adjourned.

Wednesday, February 2, 9:30 o'clock a. m. Orchestra. "The Hog," J. P. Hunt, E. A. Eldred. Discussion. Orchestra. "Passing away of the Horse; and then what?" M. B. Ross, White Hall, J. K. P. Farrelly, Carrollton. Discussion. Music. Adjournment

Afternoon Session, 1 o'clock. Orchestra. Prayer. Music. "Western Farm Life of Today," Major Giller. Discussion. Reading, Miss Edna Dill. Music. "Gardening and Small Fruits," A. Orr. Discussion. Music. "Orchards and Tree Culture," Henley Wilkinson. Discussion. Report of Committee on Resolutions. Music. Adjournment.

Evening session, 7:30 o'clock. Orchestra. Prayer. Quartet, Mesdames Anderson and Hardin and Messrs. Savage and Wyatt. Reading, Miss Nellie V. Thompson. Vocal music, White Hall Glee Club. "Public Charities," Mrs. H. T. Rainey, Carrollton. Solo, Mrs. Clara Patton. Reading, Miss Joe Lorton. "What shall we do to have Better Roads?", John McQueny, Marcus North. Discussion. Quartet. Adjournment

An intense interest was manifested in the meeting this year on the part of the farmers of this county as well as by all those interested in agriculture and its industrial pursuits.

The Institutes in this county are invariably looked forward to with zealous pride, and the management and farmers generally spare no efforts to make Greene County's Institutes second to none in the State.

The next meeting of the Greene County Farmers' Institute will be held in Greenfield February 2 and 3, 1899, under the auspices of the Greene County Fair Association

The officers for the ensuing year are: President, C. W. Holnback, Rockbridge; vice-president, J. H. Stubblefield, White Hall, secretary, S. E. Simpson, Carrollton; treasurer, B. C. Hodges, Carrollton.

GRUNDY COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Grundy County Farmers' institute was held at Mazon, Illinois, Thursday and Friday, February 10 and 11, 1898.

Although the weather and roads were not favorable, the meeting was large and enthusiastic, and one of the most successful ever held in the county.

Owing to the unavoidable absence of President Wm. Reardon and Vice-President Amos Dingman, the duty of presiding during the institute devolved upon Willis A. Clark, chairman of the Program Committee.

The musical numbers of the institute program were given by the Wauponsee Mandolin and Guitar Club in a very acceptable manner.

Program of first day: Called to order at 1 p. m. Music. Prayer by Rev. Miller. Music. Opening address by chairman W. A. Clark. Ladies' Hour, conducted by Mrs. Clara Harford. Paper, "The Cook's Responsibility for the Health and Character of the family," Miss Mary Dewey, Mazon. Discussion of same. Miss Dora Weldon, Verona, and Mrs. Horace Overacker, Mazon. Paper, "Bread Making," Mrs. J. M. Woods, Gardner. Discussion of same. Mrs. John K. Ely and Mrs. Sylvester Dewey. General discussion. Paper, "How to make home life attractive on the farm,"

WM. REARDON, President.

Mrs. G. M. Carpenter, Verona. Discussion, H. H. G. Gorham, Wauponsee, and Mrs. Ed. Strong, Verona. Paper, "Systematic Housekeeping in the Farmer's Home," Mrs. Geo. Wheeler, Mazon. Discussion, Mrs. F. A. Murray, Mazon, and Miss Mattie Waterman, Verona. Music. Address "The Dairy," G. W. Ridings, Morris. Discussion, E. W. Walworth and Geo. Wheeler, Mazon. General discussion.

Evening session, 7:30 p. m. Music. Recitation, Miss Carrie Dewey, Mazon. Music. Address, "Coöperation," G. F. Bell, Lостant. Music. Mr. Bell's address was a masterly effort and well received by the large audience.

Friday morning, 9 a. m. Music. Prayer, Rev. Miller. Music. Paper, "Clover Culture," J. N. Woods, Gardner. Discussion, W. A. Clark, Carbon Hill, and E. W. Walworth, Mazon. General discussion. Music. Paper, "Sugar Beet Culture," Geo. W. Ridings, Morris. General discussion.

Friday afternoon, 1:30 p. m. Music. Paper, "Corn Culture, and utility of corn as feed," Ray Woods, Gardner. "Talk on Ensilage," G. W. Ridings, Morris. General discussion. Music. Election of officers: President, Willis A. Clark, Carbon Hill; vice-president, Mrs. Clara Harford, Verona; secretary, Robert H. Dewey, Mazon; treasurer, J. N. Woods, Gardner. Adjourned.

The Grundy County Farmers' Institute will endeavor to hold at least two meetings the coming winter, one to be held at Morris, the county seat, and the other, or others, in some of the country towns of the county.

HAMILTON COUNTY FARMERS' INSTITUTE.

The Hamilton County Farmers' Institute was organized September 7, 1895. Institutes have been held at McLeansboro as follows: September 7, 1895; December 14, 1895; February 20, 1896; March 5 and 6, 1897. The last Institute was held at McLeansboro April 1 and 2, 1898, under the following management: President, Lewis J. Hale; Vice President, A. J. Yates; Secretary, John Judd, and Treasurer, Albert Neal, all of McLeansboro. Executive Committee—T. J. Garrison and John N. Upton, of Thackeray; John C. Hall, Albert Neal and J. C. Suttle, of McLeansboro.

Programme of meeting held April 1 and 2, 1898.

Friday, April 1, 1898.

The Institute met in regular session and was called to order by President Lewis J. Hale at 1 p. m.

The programme of this Institute meeting was now taken up and carried out as follows:

Address of welcome, by President Lewis J. Hale. Reading of minutes, by Secretary John Judd. Report of Treasurer Albert Neal. Reports of committees. Paper, *The Educated Farmer*, by John C. Hall, McLeansboro. Discussion, L. N. Beal, J. P. Stelle and A. J. Yates. Paper, *How to Raise and Care for Hay*, by John C. Hall, McLeansboro. Discussion, A. J. Yates, I. J. Raeder, Ed. H. Bowen, J. P. Stelle, John Judd, L. J. Hale, John Hayter, G. W. Golihur, L. N. Beal, R. F. Brockett and I. W. Williams. Adjourned to 7:30 p. m.

L. J. HALE, President

Evening Session, 7:30 p. m.

Meeting called to order by the Vice President, A. J. Yates. *The Country Boy*, by Prof. John T. Gilbert, McLeansboro. Discussion, John C. Hall, I. W. Williams, Mrs. J. C. Hall, Prof. G. H. French, J. P. Stelle and L. N. Beal. Paper, *Education of Farmers' Children*, by Mrs. L. N. Beal, Mt. Vernon, was an excellent paper and merited the attention it received. Song, *Memories of Home*, by Miss Effie Yates, that was well received.

Morning Session, April 2, 1898.

Meeting called to order by the President, L. J. Hale. Prayer, by Elder I. W. Williams. Paper, *Horticulture for Southern Illinois*, by L. N. Beal, Mt. Vernon. Discussion, Prof. G. H. French. Prof. French also gave a short talk on *The Pear Tree and Diseases of Same*. Paper, *How to Make the Farm Pay*, by John P. Stelle, Dahlgren. Discussion, L. J. Hale, I. J. Raeder, L. N. Beal, B. F. Brockett and J. P. Stelle.

Afternoon Session, 1 p. m.

Meeting called to order by President L. J. Hale. Lecture, *Insects Injurious to Orchards*, by Prof. G. H. French, Carbondale, which was well received and appreciated by all present.

The next meeting will be under the management of the officers-elect, viz.: President, A. J. Yates, McLeansboro; Vice President, G. W. Golihur, Thackeray; Secretary, Ed. H. Bowen, McLeansboro. Treasurer, John Judd, McLeansboro. Executive Committee—James L. Weldon, M. A. Hooker, W. B. Anderson, John Judd and John C. Hall, all of McLeansboro.

HANCOCK COUNTY FARMERS' INSTITUTE.

The Hancock County Farmers' Institute was organized in 1887. Meetings have been held from time to time in several different places in the county.

Our last meeting was held in the Court House at Carthage, Ill., November 19-20, 1897, under the following management: President, Wm. A. Moore, Elvaston, Ill.; secretary, F. C. Sinele, Carthage; treasurer, C. N. Dennis, Hamilton; executive committee, W. B. Marvel, Carthage, G. W. Shinkle, Denver, Geo. Davis, Niota, C. S. Campbell, Laharpe, R. D. Riley, Burnside.

Our manner of making programme is as follows: The president issues a call for a meeting of the executive committee at a given time and place, and they, with the officers, suggest the names of speakers and assign subjects, and the secretary is instructed to correspond with the parties and obtain their consent to being placed on the programme.

Our programme was as follows:

Friday afternoon, 1 o'clock.

President's address. "The Future Outlook for Cattle," John Jackson, Niota. Discussion led by Walter Harnest, Carthage. "The Future Outlook for Apples," J. T. Johnson, Warsaw. Discussion led by Homer D. Brown, Hamilton. "Postal Savings Banks," Hon. B. F. Marsh. "The Future Outlook for Horses," A. T. Graham, Denver. Discussion led by Dr. E. M. Robbins, Carthage. "Mutual Insurance," C. M. McMillan.

Saturday morning, 9:30 o'clock.

"The Farmer's Children," M. G. Wiley, Burnside. "Potatoes. Variety and Cultivation," J. B. Frisby, Mendon. "Weeds and Their Extermination," Dr. C. S. Rice, Disco.

Afternoon session, 1:15 o'clock.

Election of officers. "Chickens for Profit," Rev. Baird, Carthage. Discussion led by S. S. Chapman, Elvaston. "Election of U. S. Senator by Direct Vote of the People," J. W. Williams, Carthage. "Hygiene on the Farm," Dr. R. L. Casburn, Carthage.

Officers for the ensuing year are: President, Wm. A. Moore, Elvaston; secretary, F. C. Sinele, Carthage; W. B. Marvel, Carthage. The executive committee will consist of one from each of the twenty-five townships of the county, and five members to make a quorum.

HARDIN COUNTY FARMERS' INSTITUTE.

No Institute has been organized in this county.

HENDERSON COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Henderson County Farmers' Institute was held at Biggsville, Ill., Friday and Saturday, February 18 and 19, 1898, under the following management: President, J. M. Fort, Stronghurst; vice president, L. E. Pollard, Little York; secretary, J. Wesley Rankin, Biggsville. Auxiliary board, Mrs. Finch, Terre Haute; Mrs. Porter, Media; Mrs. Cowden, Biggsville, Miss Watson, Oleno, and Mrs. Welch, Rozzetta.

The program of the meeting held February 18 and 19, 1898, is as follows:

PROGRAM.

FIRST DAY—10 A. M.

Prayer, Rev. W. F. Dudman. Paper, Hal W. Stewart. Paper, "Weeds, Both Noxious and Useful," J. D. Allaman. Paper, "The Carriage Horse," J. T. Whiteman. Appointment of committees on business.

AFTERNOON—1 O'CLOCK.

Paper, "Does Farming Pay?" R. Grove. Paper, "Does Farming Pay?" John Stine. Paper, "Butter Making on the Farm," R. W. Rankin. Paper, "Taxes," L. P. Maynard.

J. M. FORT, President.

EVENING—7:30 O'CLOCK.

Music, Stronghurst Glee Club. Address, "The Farmer as a Citizen," J. W. Gordon. Recitation, by Dr. Tillotson. Music, by Glee Club. Address, by Hon. Geo. W. Dean. Music.

SECOND DAY—10 A. M.

Prayer, Rev. J. A. Renwick. Paper, "The Farm, the School, and the Boy," Wm Crouch, Jr. Address, by Rev. J. B. King. Paper, "A Neat Farmer," Wesley Milliken. Paper, "Fruit for Everybody," W. T. Weir.

AFTERNOON—1 O'CLOCK.

Music. Paper, "Incubation," Mrs. C. G. Richey. Paper, "Poultry Raising," Mrs. A. G. McQuown. Paper, "The Qualifications of a Farmer's Wife," Mrs. D. A. Whiteman. Music. Recitation, by Blanche Rankin. Paper, "Woman's Relation to Farm Work," Mrs. Wiegand. Paper, "The Farmer's Home," Mrs. J. B. Lant. Paper, "Home Literature," Mrs. L. P. Maynard. Music. Paper, "Best Method of Improving Farm Work," Miss Jennie Galbraith. Music. Recitation, Mayre Barnes. Business. Adjournment.

The following officers will have charge of next Institute: President, T. N. Baird, Biggsville; vice president, Hal Stewart, Biggsville; secretary, Ed D. Rankin, Biggsville. Auxiliary board, Mrs. Cowden, Biggsville; Mrs. Wiegand, Biggsville; Mrs. J. B. Lant, Oleno; Mrs. Porter, Media, and Mrs. Maynard, Terre Haute. The next meeting will be held at Oquawka, November 24-25, 1898.

HENRY COUNTY FARMERS' INSTITUTE.

The last meeting of the Henry County Farmers' Institute was held at Galva, January 18-20, 1898, under the management of John N. Morgan, President, A. W. Hunter, secretary, both of Galva. There was a good attendance and great enthusiasm was manifested throughout the entire session.

The program of the late meeting was as follows:

Thursday, January 18.

Morning session, 10 o'clock.

Call to order. Music by quartette. Prayer, Rev. M. A. Head. Address of welcome, Mayor R. F. Beals. Response, J. N. Morgan, Superintendent County Institute. Appointment of committees. Report of Executive and other committees. General discussion of plans and election of officers for Galva local institute for 1898.

Afternoon session, 1 o'clock.

"King Corn, the Glory of the West," John McCurdy, Alpha. "Feeding and Marketing Cattle," Geo. W. Ferguson, Orion. "Raising and Feeding Hogs for Market," W. R. Tracy, New Windsor.

Evening session, 7:00 o'clock.

Music, instrumental. "Ice and Cold Storage on the Farm," Ames Barlow, Galva. Vocal solo, Mrs. Hugh Baird. "Farm Improvement," Jacob Friend, Nekoma. Music, Mandolin Club. "Education of Farmers' Children," F. U. White, Galva.

Wednesday, January 19.

Morning session, 10 o'clock.

"Noxious Weeds and Legislation Thereon," John Kewish, Galva. "Country Telephone," Geo. F. Bell, Lostant. "The Farm Garden," W. G. Skinner, Nekoma.

Afternoon session, 1 o'clock.

Music, Quartette. "How We Make Butter," Miss Elvira Demuth, Toulon. "Fruit Trees on the Farm," J. L. Hartwell, Dixon, President of the Horticultural Society Northern district Illinois. "Poultry on the Farm," H. Clay Martin, Galva.

Evening session, 7 o'clock.

Music, piano solo, Mrs. C. A. Beard. "Combinations and their Resultant Trusts," Rev. H. K. Painter, Galva. Vocal solo, Mary Parkin. "Azoturia," Dr. James McClintock, Galva. Vocal solo, Lottie Kelly. "How to Keep the Boys on the Farm," J. L. Hartwell, Dixon.

Thursday, January 20.

Morning session, 10 o'clock.

"Clover as a Fertilizer, Forage and Seed Crop," J. N. Morgan, Galva. "The Draft Horse of America," H. E. Houghton, Woodhull.

Afternoon session, 1:30 o'clock.

Horse Display. "Sheep Husbandry in a Moral, Financial and Practical Light," H. H. Oliver, Toulon. "Small Fruits on the Farm," Chas. Malcolm, Cambridge.

The next institute will be held at Osco, January 24-25, 1899, under the following management: President, W. M. Ringle, Osco; vice-president, D. C. Tomlinson, Osco; secretary, D. O. Hinman, Cambridge; treasurer, F. J. Stoughton, Osco.

IROQUOIS COUNTY FARMERS' INSTITUTE.

The twelfth annual meeting of the Iroquois County Farmers' Institute was held at Watseka, Ill., Wednesday and Thursday, January 19 and 20, 1898, in Braden's opera house, under the following management: President, David Brumback, Danforth, Vice-President, Chas. E. Foster, Watseka, Secretary, Munroe Garrison, Watseka; Treasurer, J. S. Hasbrouck, Crescent, aided by efficient and energetic committees on program and reception, exhibits and awards, each class of exhibits having a superintendent and an expert judge to pass upon their merits.

The program was as follows:

WEDNESDAY AFTERNOON, 1:30 O'CLOCK.

Song, "America," by audience.
Prayer, Rev. Ferrall.
Music, Prof. Ripley's Mandolin Orchestra.
Address of welcome, Mayor J. S. Near.
Response, President David Brumback.
"Poultry on the Farm," B. M. Wyman, Sycamore. Discussion, H. S. Dixon, La Hogue, John S. Anderson, Woodland.
"Fruit on the Farm," F. I. Mann, Gilman.
This program was interspersed by violin music by little Miss Pearl Cullom, the musical prodigy of eastern Illinois.
Appointment of committees by the President.

DAVID BRUMBACK, President.

WEDNESDAY EVENING, 7:30.

Music, Prof. Ripley's Mandolin Orchestra.
Song, Acme Quartet, Watseka.
Music, Little Miss Pearl Cullom.
"The Farmer and the Teacher," Frank M. Crangle, Watseka.
"Postal Savings Banks," M. B. O'Malley, Seneca.

THURSDAY MORNING, 9:00.

Song, "Columbia," by audience.
"Live Stock," E. E. Chester, Champaign.
"Contagious Diseases of Live Stock," Dr. J. L. Tyler, Chebanse.
Report of committee on awards.

THURSDAY AFTERNOON, 1:00 O'CLOCK.

Song, "Marching Through Georgia," Audience.
"General Agriculture," F. M. Higgins, Seneca. Discussion, J. W. Dixon, Ambia; H. J. Calkins, Ambia.
Song.
"Fertility of the Soil," H. G. Merritt, Onarga.

THURSDAY EVENING, 7:30 O'CLOCK.

Violin solo, Prof. Thomas Lott.
Song, Star Quartet, Lon Rogers, A. C. Fernald, Frank Leake, Harry Parker.
"Agricultural Education," David Ward Wood, Chicago.
Adjournment.
The officers for the ensuing year are: President, David Brumback, Danforth; Vice President, Chas. E. Foster, Watseka, Secretary, Elmer Watkins, Watseka; Treasurer, C. E. Canter, Watseka.

JACKSON COUNTY FARMERS' INSTITUTE.

The Jackson County Farmers' Institute was organized June 20, 1896. The following officers were elected. President, J. C. Scott; Vice President, J. B. Hester; Secretary, T. C. McKinney; all of Carbondale; Executive Committee, Maj. H. P. Burroughs, Elkhartsville; J. C. Hughes, Murphysboro; W. W. Thomas, Makanda; T. W. Thompson, Carbondale; P. J. Keller, Campbell Hill.

JASPER COUNTY FARMERS' INSTITUTE.

Jasper County Farmers' Institute was organized in December, 1896, and the first Institute was held at the court house in Newton January 30-31, 1896. The last Institute was held at Newton in the court house December 8-9, 1897. The following officers conducted the meeting: President, Wm. C. Gillson, Lds; secretary *pro tem*, A. A. Nees, Newton; treasurer, J. J. Kinsel, Newton. The attendance was not very large, but a deep interest was taken by those present.

The programme rendered was as follows:

Invocation by W. E. Barrett.

Some of the speakers being absent, the chair was authorized to appoint speakers to lead out on the different topics.

The president read the address as to the object of the meeting.

The next topic, paper No. 1, was on "General Farming and Rotation of Crops," by James P. Warren.

The paper was read and the president gave the contents to the meeting for discussion.

On the topic, "Corn, Its Culture and Marketing," R. H. Vanderhoof read paper No. 2. He was followed by quite a lengthy discussion.

"Rearing and Care of General Farm Stock," led by P. R. Lewis.

Meeting adjourned.

W. C. GILLSON, President.

9:40 A. M., THURSDAY, DECEMBER 9

President in the chair.

Institute was called to order.

"Rearing and Care of General Farm Stock," was continued at some length.

"Goods Roads," paper No. 3, by G. H. Larrabee, was followed by a discussion.

On motion the Institute adjourned to 1 o'clock.

Institute convened at 1 p. m.

The president suggested that only fifteen minutes be given for the discussion of the topics and their being no objections he so ruled.

Topic, "Poultry Breeding and Marketing," papers Nos. 4 and 5, by Mrs. S. Rose Carr and J. C. Vanderhoof, respectively

Topic, "Sheep Breeding and Raising," paper No. 6, contributed by Paul Hartrich, which was read by W. E. Barrett.

Topic, "Cultivation of Grasses and Their Uses," address by J. M. Geddes.

Topic, "Hog Breeding and Raising," paper No. 7, read by R. D. K. Price.

Topic, "Horse Breeding and Raising," paper No. 8, by Robert Cummins.

P. A. Coleman read paper No. 9, on topic, "Education for Farmers' Boys and Girls"

The following are the names of the officers elected for the ensuing year:

W. C. Gillson, president; J. M. Geddes, vice president; A. A. Nees, secretary and treasurer. J. M. Geddes, delegate to State Institute.

Executive Committee—R. H. Vanderhoof, Wade; Wm. E. Barrett, North Muddy, Geo. H. Larrabee, Willow Hill; J. P. Warren, Crooked Creek; R. D. K. Price, South Muddy; Paul Hartrich, Fox; Sylvanus Farley, Grandville; Lee Ebbert, Grove; Cade Kneff, Smallwood; Eugene Hartrich, Ste. Marie.

The next meeting will be held January 25-26 at Newton.

JEFFERSON COUNTY FARMERS' INSTITUTE.

The Jefferson County Farmers' Institute was held at the Mt. Vernon fair grounds, Tuesday, Wednesday and Thursday, October 12-14, 1897, under the management of President L. N. Beal, Secretary John R. Piercy, both of Mt. Vernon.

The following programme was rendered:
Tuesday, October 12

10:00 a. m., Song, America, by members of the Institute. Prayer by Rev. J. C. Kinsion. Address of welcome by Mayor Andy Hall. Response by President L. N. Beal. The Relation of the Farmer to Our Country, a paper (or address) by Rev. H. Clay Yates. The Farm Hand and His Wages, paper by J. Ransom Piercy of Blissville.

1:00 p. m. The Wheat Field and Home Bread, paper by Nelson Smith of Shiloh. Corn and Its Cultivation, paper by Senator J. T. Payne of Shiloh. Stock Peas and Soja Bean, paper by A. I. Moss of Shiloh. The Garden and Small Fruits, a paper by C. M. Dixon of Parish, Ill.

Evening at Court House.

7:00 p. m. Song. Prayer. A paper by Kirby Smith of Mt. Vernon; subject, Hard Roads. Vocal music by Prof. Crosier and class. Address by Rev. H. B. Douglass. Declamations, recitations, etc.

L. N. BEAL, President

Wednesday, October 13.

10:00 a. m. Sheep and Their Profits, paper by W. S. Chaney of Pendleton township. The Farm and the Farmer, paper by C. H. Judd of Moore's Prairie township. The Farm Home, a paper by Jacob Angle of Mt. Vernon.

1:00 p. m. Dairy Cattle, paper by Hon. Walter Kimzey of Tamaroa, Ill. A Baby Show at the Stand. Beef Cattle, paper by John Danner of Shiloh township. Hogs for profit, a paper by A. Frank Maxey of Mt. Vernon.

Evening at Court House.

7:00 p. m. Song. Prayer. Music. A paper by W. B. Phillips of Pleasant Grove school; subject, Our Country Schools, Their Relation to the Farm. Declamations, recitations, select readings.

Thursday, October 14.

10:00 a. m. The Horse; best Breed for Our Country, paper by Capt. John R. Moss of Mt. Vernon. The Orchard and Its Enemies, a paper by Capt. S. T. Maxey of Mt. Vernon. The Farmer's Boy and What He Should Know, a paper by Master Frank Piercy of Shiloh.

1:00 p. m. Poultry and Poultry Products, a paper by Mrs. Levi Legge of Shiloh. How to Make and Market Butter, a paper by Miss Sebe Howard of Fairfield. Election of officers. A general display of all kinds of stock brought for show on the ring and the award of diplomas.

The next meeting will be held at Mt. Vernon, October, 1898, under the management of the officers elect, viz.: President, L. N. Beal; vice president, A. I. Moss; secretary and treasurer, John R. Piercy, all of Mt. Vernon.

JERSEY COUNTY FARMERS' INSTITUTE.

The annual Jersey County Farmers' Institute was held in the court house at Jerseyville Tuesday, Wednesday and Thursday, Feb. 8-9-10, 1898. The attendance was the largest in the history of the Institute of the county. This was greatly accelerated by the awarding of premiums on various products of the kitchen and brought out the ladies in large numbers. Music for the occasion was furnished by a male quartette. President E. A. Riehl presided.

The following topics were discussed:

Feeding and Breeding of Cattle, discussed by H. N. Lurton, W. H. Fulkerson and T. S. Chapman, all of Jersey county. Corn Culture was the subject of a lengthy and interesting discussion, led by E. S. Fursman, of El Paso, Ill. Miss Helen Riehl, of Alton, read a paper on The Rural Kitchen.

In the evening session D. J. Murphy, county clerk of Jersey, read an able paper on the subject of Public Charities. Mr. Ful-

E. A. RIEHL, President.

kerson also made a short talk on the importance of sticking to the farm.

Wednesday morning Jas. Davenport read a paper on Poultry Raising, which was followed by a lively discussion. Dr. Calloway Nash, of Jerseyville, read an able and exhaustive paper on The Feasibility of Commercial Orchards in Jersey County. The subject was further discussed by Messrs E. A. Riehl and P. E. Vandenburg, local fruit growers. The subjects Value of Green Fertilizers and Beet Sugar Industry in Illinois were discussed by E. A. Riehl, C. Nash and others.

In the afternoon the subject The Up-to-Date Horse and Export Demand was fully discussed by F. J. Berry, of Chicago.

On Thursday the subjects Potato Culture and Best and Cheapest Farm Fences were discussed by G. H. Woodruff, M. M. Cooper and W. H. Bartlett. J. C. Reintges, of Jerseyville, read a paper on The Saddle Horse.

Appropriate resolutions were passed, and the full proceedings were published in both the Jerseyville Republican and the Jersey County Democrat.

The officers elected for 1898 are as follows: President, E. A. Riehl; Secretary and Treasurer, J. W. Becker. Executive Committee—W. H. Fulkerson, W. H. Bartlett and Leslie Cross.

The next Institute will be held in Jerseyville.

JO DAVIESS COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Jo Daviess County Farmers' Institute was held at Elizabeth, March 2-3, 1898.

The following officers were in charge: President, G. W. Pepoon, Warren; secretary and treasurer, S. A. Clark. Executive committee, J. P. Frazer, J. J. Artmann, W. Overstreet, A. H. Wier, N. A. Gault, Fred Hagie, Henry Ashmore, Dr. W. Hutton, C. Barnwarth, A. H. Nash, R. Eustice, Samuel Hitt, John Corveny.

The programme of the late meeting was as follows:

WEDNESDAY, MARCH 2, 1898—10:00 A. M.

Prayer, Rev. D. T. Kahl. Organization of Institute and appointment of committees. "The American Farmer," John Dallyn, Galena. Discussion.

AFTERNOON SESSION—1:30 P. M.

"Sheep," A. J. Lovejoy, vice president Ninth Congressional District, Roscoe, Ill. Discussion. "Horses," J. B. Rife. Discussion. "Need of More Self-Reliance Among Farmers," Mrs. A. A. Simmons, Greenvale.

EVENING—7:30 P. M.

Address of welcome, J. C. McKenzie, Response, John Dallyn, Galena. Paper, "Our Boys and Girls," Mrs. C. A. Walters. Song, Bessie and Tiny Wier. Talk, "The Farm and Dependent Children," Miss Anna Felt, Galena. Recitation, Harold Monnier. Paper, "Our Country Homes," Mrs. W. N. Milier. Answers to questions from Query Box.

THURSDAY, MARCH 3, 1898—10:00 A. M.

"How Should We Utilize Corn Fodder to the Best Advantage?" E. W. Monnier, Elizabeth. Discussion. "Hogs for Profit," A. J. Lovejoy, Roscoe, Ill. Discussion.

AFTERNOON SESSION—1:30 P. M.

Address, Hon. G. W. Curtiss, Freeport, Ill. "Our Dairy Interests," J. H. Speer, Hanover. Discussion. "Future Prospects of Agriculture in Jo Daviess County," Dr. Hutton, Elizabeth. Answers to questions.

The next Institute will be held at Scales Mound, February 1-2, 1899, under the management of the officers-elect, viz.: President, Jas. R. Berryman, Scales Mound; vice president, G. W. Pepoon, Warren; secretary and treasurer, John Dallyn, Galena, box 721.

JOHNSON COUNTY FARMERS' INSTITUTE.

The Johnson County Farmers' Institute was organized January 22, 1891. Institutes have been held in Vienna in 1891, 1892, 1893, 1894 and 1895. The last Institute held at Vienna, September 27-28, 1895, was under the management of the following officers: President, W. S. Wymore; Secretary, W. C. Simpson; Treasurer, J. W. Flemming; all of Vienna; Executive Committee, R. Reddin, C. L. Westman, W. A. Looney, all of Vienna.

KANE COUNTY.

No Institute has yet been organized in this county.

KANKAKEE COUNTY FARMER'S INSTITUTE.

The Kankakee County Farmers' Institute was organized in 1891. Institutes have been held in Kankakee in 1891, 1892 and 1893, and in Momence in 1894. The officers of the Institute are as follows: President, T. C. Schoberry, Union Hill; Vice President, Wm. Cooper; Secretary, Len Small; Treasurer, A. J. Byrnes; the last three of Kankakee.

KENDALL COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Kendall County Farmers' Institute was held at Yorkville, Ill., Wednesday and Thursday, Feb. 9 and 10, 1898, under the management of the following officers, to whom great credit is due for their untiring effort to make this meeting equal that of any meeting of agriculture in the State: A. D. Havenhill, President, Fox, Ill.; Edmond Seely, Vice-President, Kendall; R. A. McClelland, M. D., Secretary and Treasurer, Yorkville.

The following programme was arranged for each day and evening:

Wednesday morning session, Feb. 9, opened at 10:30 o'clock with music, followed by prayer by the Rev. Mr. Grlawold. Address of welcome, Hon. J. R. Marshall. Response, H. P. Barnes. President's address, A. D. Havenhill. Music. Paper on Poultry Raising, A. P. Hill, Bristol, Ill. Discussion.

Afternoon Session, 1:30 p. m.

Music. Recitation, Miss Ruth Johnson, Kendall. Benefits of Farmers' Institutes, Hon. G. A. Wilmarth, Seneca, Ill. Discussion. Music. A. D. Curran, county superintendent of schools, made an interesting talk on Rural Schools.

A. D. HAVENHILL, President.

Evening Session, 7:30.

Song, Miss Lina Beebe, The Mission of the Rose. Paper, Household Economy, Mrs. W. B. Loyd, of Glen Elyn, Ill. Violin, Miss May Markle. Address, Friendly Relations Between Farmer and the Railroad, by Hon. H. D. Judson. Music.

Thursday, Feb. 10, 1898—Morning Session, 10 a. m.

Music. Prayer, by Rev. Mr. Meek. Reports of committees. Election of officers. Paper, by H. Augustine, Normal, Ill., Fruits of the Farm. Discussion. Music.

Afternoon Session, 1:30.

Music. Recitation, by Dr. A. W. Moore, Bristol, Ill., The Irishman's Panoram. Paper, by A. J. Lovejoy, Roscoe, Ill., on Sheep Husbandry. Discussion. Recitation, by Miss Myra Arlen, Kendall, Hans and Fritz. Paper on Dairying, by Eugene Matlock, Yorkville, Ill. Discussion. Paper on Beef Culture, by John C. Bertram. Discussion. Song, by Miss Minnie Meyers, Milbrook, Ill., The Jolly Old Farmer.

Evening Session, 7:30 p. m.

Music. Song, by the Yorkville Quartette. Recitation, by Miss Clara Minkler, Oswego, Ill., Milking Time. Music, by the LaCroix Club. Address, by Hon. David Ward Wood, Chicago, Ill., on Agricultural Education. Music. Vocal solo, by Miss Mertie Crum, Yorkville. Address, by Hon. Duncan McDougall, Ottawa, Ill., Here and There. Song, by Male Quartette, Illinois. This closed the second annual meeting of the Kendall County Farmers' Institute, which has been well attended, and the farmers of this county are more anxious than ever that the next meeting of this Institute shall exceed the past meeting and that a more urgent effort will be made to present exhibits of the fruits of this meeting, which adjourned to meet in Yorkville, Ill., some time in January, 1899.

The following officers were elected for the ensuing year: President, Edmund Seely, Kendall; Vice President, E. A. Meyer, Milbrook; Secretary and Treasurer, R. A. McClelland, Yorkville. Executive Committee—President, Vice President, Secretary and Charles Shepherd, Yorkville, and Alonzo Stausel, Yorkville.

KNOX COUNTY FARMERS' INSTITUTE.

The Knox County Farmers' Institute held its last annual meeting at Galesburg January 26, 27 and 28, 1898, under the management of the following officers: President, George W. Gale, Galesburg; Secretary, O. L. Campbell, Knoxville; Treasurer, H. M. Sisson, Galesburg; Executive Committee, Hugh Greig, Oneida; W. T. Hamilton, Galesburg; L. W. Olson, Sparta.

The programme of the last meeting was as follows:

WEDNESDAY MORNING, JANUARY 26.

Music, in charge of John Coolidge.

Prayer.

Address of welcome, Hon. F. F. Cooke, Mayor of Galesburg.

Response, G. W. Gale, President of Institute.

Reports of delegates to State Farmers' Institutes, J. H. Coolidge, District Director.

Address, "Building and Arrangement of Farm Buildings," E. H. Goldsmith.

AFTERNOON.

Music.

Address, "Cattle Breeding and Feeding," Hon. A. P. Grout, President State Cattle Breeders' Association. Discussion.

Address, "How I Fed Two Cars of Cattle," Chas. Weir, Discussion.

Sheep Talk, led by Jerry Wallick.

THURSDAY MORNING, JANUARY 27.

Music.

Prayer.

Address, "Fruit Culture and Poultry Raising," A. G. Humphrey.

Address, "Clover as Feed and Fertilizer," Hon. D. W. Vittum, Member of State Board of Agriculture. Discussion.

Address, "Farming for Profit," W. W. Tracy.

AFTERNOON.

Music.

Address, "How to Make Hog Raising a Reasonable Success," H. M. Sisson. Discussion.

Address, "How to Keep the Farmer on the Farm," E. S. Fursman.

Address, "Education of the Farm," J. H. Finley, President of Knox College.

FRIDAY MORNING, JANUARY 28.

Music.

Prayer.

Address, "Bees and Honey," F. N. Johnson.

Address, "Sugar Production in Illinois," P. G. Holden, Professor of Agricultural Physics, State University.

AFTERNOON.

Music.

Address, "Beet Sugar," A. Maritzen, Industrial Department C., B. & Q. R. R.

Election of officers.

Appointment of delegates to State Farmers' Institute.

Appointment of delegates to District Farmers' Institute.

Address, "Farmers' Insurance," J. C. Eiker, President Knox County Farmers' Insurance Company.

The officers elected for the ensuing year were: President, G. W. Gale, Galesburg; Secretary, O. L. Campbell, Knoxville; Treasurer, H. M. Sisson, Galesburg.

The next meeting will be held at Galesburg February 1-3, 1899.

LAKE COUNTY.

No Institute has yet been organized in this county.

LASALLE COUNTY FARMERS' INSTITUTE.

The third annual meeting of the LaSalle County Farmers' Institute was held in Sherwood's Opera House, Ottawa, Ill., Thursday and Friday December 16 and 17, 1897.

The meeting was under the management of the following officers: President, G. A. Willmarth, Seneca; vice-president, Chas. Dana, Waltham; secretary, Miss E. J. Mudge, Peru; treasurer, Hon. C. E. Hook, Ottawa. Executive Committee—G. D. Shaver, Ottawa; Senator Sawyer, Streator; M. P. Trumbo, Ottawa; Alfred Hartshorn, LaSalle; Samuel Grove, Utica.

The members of the following committees contributed greatly to the success of the meeting, which was one of the best ever held in the county, viz.: Music, Finance, Printing and Program.

The program of the Institute meeting held December 16 and 17, 1897, is as follows:

Thursday, 10 a. m.

Music, "America." Prayer. Welcome address, Mayor C. E. Hook. Response, G. A. Willmarth, Seneca, president Farmers' Institute. Paper, "Bee Keeping," J. A. Green, Ottawa. Discussion, Silas Bagley, Seneca; Hale Francis, Freedom.

G. A. WILLMARTH, President.

Thursday, 1:30 p. m.

Music, Prof. Chamberlin, Ottawa. Prayer. Declamation, Robert Wilson, Waltham; "Corn Culture," E. S. Fursman, El Paso. Discussion, U. S. Ellsworth, Deer Park, G. A. Boasworth, Marseilles. Music, Wm. E. Pritchard, Ottawa. Reading, Miss Mary Campbell, Freedom. Paper, "Our Farmer's Girls," Mrs. L. G. Chapman, Freedom. Music, Chamberlain Quartette. "Poultry on the Farm," Miller Purvis, editor Farmers' Voice, Chicago. Discussion, Frank Beach, Dayton; Mrs. Annie Francis, Freedom.

Thursday, 7:30 p. m.

Music, Quartette. Prayer. Reading, Miss Mae McDougall, Ottawa. Music, Miss Nellie Harrison, Ottawa. Address, "Our Rural and City Homes," Hon. David Ward Wood, editor Western Plowman, Chicago. Reading, Miss Lizzie Rigden, Ottawa. Piano duet, Miss A. Werner and Miss C. Schock, Ottawa. Address, "Farmers," Hon. C. A. Windle, Ottawa. Reading, Miss Lizzie Rigden, Ottawa. Music.

Friday, 10 a. m.

Music. Prayer. Declamation, Clyde Butterfield, Marseilles. Paper, "The Farmer's Fruit Garden, Wm. Waghorn, Marseilles. "Small Fruits on the Farm," E. S. Fursman, El Paso. Discussion, A. C. Baldwin, Deer Park; Wm. Greenless, Dayton; Mr. Dana Waltham. Query box, in charge of G. D. Shaver, Rutland.

Friday, 1:30 p. m.

Music, F. M. Higgins, Seneca. Prayer. Reading, Miss Maggie Garden, Seneca. "Best Methods of Handling Dairy Cows," Henry Peck, South Ottawa. Discussion, E. H. Spicer, Marseilles; S. U. Lawry, Freedom. D. H. Wickwire, Rutland. Reading, Miss Lucia Barber, Miller. "Sheep Husbandry," A. D. Havenhill, Fox. Discussion, Thomas Davis, Triumph; Henry Wiley, Freedom. "Milk as a Factor in the Cause of Disease," Dr. W. F. Weese, Ottawa. Discussion, Dr. W. G. Putney, Seneca, Dr. C. G. Deenis, Ottawa. Music, F. M. Higgins, Seneca.

Friday, 7:30 p. m.

Music, instrumental duet, Misses Werner and Shock, Ottawa. Prayer. Reading, Mrs. J. C. Hatheway, Ottawa. "Fireside Philosophy," Mrs. E. L. Gleason, Mendota. Music, Mrs. Clara G. Trimble, Ottawa. Address, descriptive, "Here and There," Hon. Duncan McDougall, Ottawa. Reading, "Aux Italiens," Miss Mabel Imus, Mendota. Music, Mrs. Clara G. Trimble, Ottawa. Paper, "The Sugar Beet," Prof. P. G. Holden, of the Illinois State University. Discussion, C. E. Fisher, Ottawa; E. H. Strait and M. P. Trumbo, Dayton. Close.

This Institute was a grand success. The officers for 1898 are as follows: President, S. A. Willmarth, Seneca; vice-president, Chas. Dana, Waltham; secretary, Mrs. L. G. Chapman, Freedom; treasurer, Al. F. Schock, Ottawa.

The next meeting will be held in either Streator or Ottawa, Ill., Jan. 26 and 27, 1899.

LAWRENCE COUNTY FARMERS' INSTITUTE.

The Lawrence County Farmers' Institute held their third annual meeting at the court house, Lawrenceville, the 23d and 24th of February, 1898, under the management of President J. K. Dickirson, Lawrenceville, Ill.; secretary, W. E. Neal, Bridgeport; treasurer, James Eaton, Bridgeport.

The following program was rendered to an appreciative audience, almost exclusively farmers, who apparently came for no other purpose than to learn more of the many things connected with their business:

Wednesday morning, 9:30.

Music. Prayer, by Elder W. R. Corter. Music. Address by the president. Appointment of committees. Music. "Historical Sketch of Lawrence County," J. A. Jones, Lawrenceville. "Most Profitable Dairy Cattle," Geo. Emerick, Sumner.

Afternoon session, 1:30.

Music. "Wheat," Dr. Daniel Berry, Carmi. "Roads," Hon. John Landrigan, Albion. Question box.

Evening session, 7:00.

Welcome address, by Mayor J. W. McCleave. Response, by Judge C. S. Conger, Carmi. "Home Literature," Mrs. G. W. Lackey.

Morning session, Thursday 24th, 9:30.

Music. Prayer, Rev. J. C. Orr. Music. "Crops for Forage and Green Manuring," J. E. Seller, Mt. Carmel. "Horticulture," Judge C. S. Conger, Carmi. "Beef Cattle, How Produce at a Profit," Robt. Kingsbury, Birds.

Afternoon session, 1:30.

Music. "Best Hog For the General Farmer," Robert Sherriden. "Our Farms, How Keep Up Fertility," J. C. Morris, Olney. "Has the Institute Benefited Me?" General discussion. Report of committee.

Our next meeting will be held February 1-2, 1899, at Lawrenceville, and we expect to make them two gala days for the farmers of Lawrence county.

Our people are beginning to find out that pleasure and profit can in this case be combined together. A pleasure to meet together and make and renew acquaintances; a profit from listening to and putting in practice some of the many new ideas advanced.

The officers for the ensuing year are as follows: President, Robert Kingsbury, Birds; secretary, W. E. Neal, Bridgeport; treasurer, J. K. Dickirson, Lawrenceville.

LEE COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Lee County Farmers' Institute was held at Dixon, Illinois, Thursday and Friday, February 3 and 4, 1896, under the following management: President, Roy E. Swigart; vice-president, Abner Barlow; secretary, Hon. L. W. Mitchell; treasurer, A. A. Reed. Executive Committee, Hon. L. W. Mitchell, Henry Decker, Will Morris, A. G. Judd, R. E. Swigart. The program consisted of the following, all the speakers were present and most ably acquitted themselves and did good work for the institute.

Thursday's Program:

Morning session.

Invocation, Rev. O. H. Cessna. "Growing and Care of a Farm Orchard," by H. R. Cotta, Freeport. "Spraying," by J. L. Hartwell.

Afternoon session.

ROY E. SWIGART, President.

Address of welcome, by Mayor F. A. Truman. Response by President Roy E. Swigart. "The Outlook for the Horse Market," F. J. Berry, Chicago. "Corn Talk," E. S. Fursman, El Paso.

Friday morning session.

"A Talk on Hogs," by G. A. Willmarth. "Poultry Talks," by E. S. Fursman. Secretary's report read and approved.

Afternoon session.

"Fireside Philosophy," Mrs. E. L. Gleason, Mendota, Illinois. "Housekeepers' Rights," Mrs. C. L. Swigart, Dixon. "Growing and Feeding Steers," C. H. Hughes, Dixon, and "Farm Homes," by E. S. Fursman.

No evening programs were given and it was considered one of the best attended and most helpful of any of our meetings.

The following officers were elected for the ensuing year: President, Hiram Hetter, Dixon; vice-president, John L. Lord; secretary Roy E. Swigart, Dixon; treasurer, Eugene Raymond.

Our Institute has combined with the other counties of this district and will hold our Institutes in rotation, starting from a central point. This will enable us to use foreign talent at no great expense and at a great convenience to the speakers and the Institutes. At least two practical speakers will be engaged for the circuit, and we shall hold three Institutes per week.

LIVINGSTON COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Livingston County Farmers' Institute was held at Pontiac, Tuesday and Wednesday, January 11 and 12, 1898. The following officers were in charge, viz.: President, Hon. N. J. Myer; secretary, C. R. Tombaugh; treasurer, Geo. W. Rice; executive committee, James Gordon, Marion Gallup and S. J. Lyons.

The programme of the late meeting was as follows:

Tuesday, 1:30 p. m.

Song, Primary pupils. Prayer. Song, Primary pupils. Address of Welcome, Mayor D. S. Myers. Response and President's address, Hon. N. J. Myer. "Farmers' Mutual Insurance Companies," C. H. Tuesburg, Pontiac. E. W. Pearson, Cayuga. Music, Reformatory String Band. Song, Reformatory Quartette. "Horticulture and Fruits for the Farm," Henry Augustine, Normal. M. C. Snethen, Pontiac. Song, Reformatory Quartette. "Corn Culture," E. S. Fursman, El Paso. Recitation, "How Ruby Played," Mr. Bernard Lyons, Nevada. "Relation of County Institutes to State Institute," Oliver Wilson, Magnolia, State Superintendent of Institutes.

Tuesday, 7:30 p. m.

Music, Pontiac Township High School Band. Prayer. Vocal solo, Miss Fannie Bagg. Oration, "The Cuban Question," Mr. Grant Armstrong. Violin duet, Misses Litta Rathbun and Marie Patton. Paper, "The Real and the Ideal Public School," C. R. Tombaugh. Song, Township High School Glee Club. Recitation, "The Book Agent," Mr. Arthur Taylor. Song, High School Glee Club. Paper, "Our Farmers' Girls," Mrs. L. G. Chapman, Freedom. Music, High School Band.

Wednesday, 9 a. m.

Song, Boys' Chorus. Prayer. Song, Boys' Chorus. "The Higher Education of Our Boys and Girls," Thos. H. Jordan, Pontiac. "Some Insects Injurious to Corn," S. A. Forbes, State Entomologist, Urbana. Song, Girls' Quartette. "Poultry on the Farm," Mrs. R. A. Judy, Long Creek. Song, Girls' Quartette. "Postal Savings Banks," Marion Gallup, Pontiac, C. S. Brydia, Fairbury.

Wednesday, 1:30 p. m.

Song, Fifth Grade quintette. Prayer. Song, Fifth Grade quintette. "Agricultural Education," Prof. E. Davenport, Dean Agricultural College U. of I. Vocal solo, Ed. L. Spears. "The Farmers' Garden," W. L. Walker, Odell, F. W. Custer, Pontiac. "Domestic Economy," Miss Helen Riehl, Alton. "Clover as a Feed and Fertilizer," D. U. Vittum, Canton.

The election of officers for the ensuing year resulted as follows: President, Dr. S. M. Barnes; secretary, O. S. Westervelt; treasurer, C. S. Brydia, all of Fairbury.

The next meeting will be held at Fairbury, January 17-18, 1899.

LOGAN COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Logan County Farmers' Institute was held at Lincoln Wednesday and Thursday, January 19-20, 1898, under the management of J. T. Foster, president, and J. W. Jones, secretary, Hon. A. B. Nicholson, Lincoln, treasurer. The programme was as follows:

Wednesday afternoon.

Music, Prof. Merry's String Quartet; paper, "The Hardships of the Farmers' Wives and How to Overcome Them," Mrs. Edgar Denny; paper, "Poultry on the Farm," Mrs. R. A. Judy; paper, "Better Foods and Better Methods in Our Homes," Mrs. H. M. Dunlap.

Thursday, January 20—Morning session.

Address, "Progressive Attractions for the Farmer," W. W. Richmond, Atlanta.

Afternoon session.

Address, "Care and Treatment of Swine on the Farm," Fred H. Rankin, Athens; address, "American Horse and Export Demand," F. J. Berry, Chicago; Round Table Talk on Rotation of Crops was conducted by J. T. Foster, Elkhart; responses by A. M. Caldwell, F. S. Applegate, J. C. Curry and J. T. Galford.

The election of officers resulted as follows: President, Hon. J. T. Foster, Elkhart; Secretary, J. W. Jones, Lincoln; Assistant Secretary, L. E. Vineyard, Lincoln; Treasurer, C. W. Blackburn, Lincoln.

MACON COUNTY FARMERS' INSTITUTE.

The Macon County Farmers' Institute held its last annual meeting at the Court House in Decatur February 1-3, 1898. The Institute was more largely attended than ever held here before and greater interest was manifested. There was a fine exhibit of farm and household products which proved a very interesting feature.

The following officers had the meeting in charge, viz.: President, W. H. Bean, Blue Mound; Vice President, E. R. Moffett, Boody; Secretary, C. A. Thrift, Forsyth; Assistant Secretary, Bering Burrows, Long Creek; Treasurer, C. H. Scott, Mt. Zion; Executive Committee, J. F. Muirhead, Harristown; David Werlepp, Maroa; Bering Burrows, Long Creek; John Walker, Sangamon; Chas. Wheeler, Decatur. The following committees contributed largely to the success of the meeting: Exhibit, Music, Advertising and Entertainment.

Among the many excellent features of the programme were the following:

Tuesday, February 1—2 o'clock.

Reading of the minutes of the last meeting by the Secretary, C. A. Thrift; music by pupils of Wood Street School; President's address, W. H. Bean; address, "Corn Culture," E. S. Fursman.

Evening session.

Remarks by the President; vocal solos were rendered by D. A. Barrackman, Marion Barrackman and Mrs. Arthur Gillespie; address, "Improved Methods of Swine Breeding," G. W. Stoner, LaPlace. The rest of the evening was taken up by musical and literary numbers by Mr. Barrackman, Mrs. Gillespie and Roy Sanner.

Wednesday, February 2.

Paper, "The Culture of Celery," E. A. Gastman; paper, "The Horse," Dr. C. C. Mills; address, "Fruit Culture," Mr. Callaway; paper, "Practical Cattle Feeding," J. G. Imboden; address, "Insects Destructive to the Corn Plant," Prof. Forbes; address, "The Present Condition of Live Stock Interests," Prof. Eugene Davenport.

Evening session.

Music; paper, "Household Cookery," Mrs. Dunlap; address, "What I Know About Farming in the West," E. A. Gastman; paper, "A Woman's Ordinary Day's Work on the Farm."

Thursday, February 3.

Address, "Dairying," A. Hebenstreit, Blue Mound; address, "Education," Prof. McCormick, State Normal School; paper, "Profits in Poultry Raising," Bering Burrows.

The old officers were re-elected for the ensuing year, and the next meeting will be held in Decatur in February, 1899.

MACOUPIN COUNTY FARMERS' INSTITUTE.

The Macoupin County Farmers' Institute was a decided success for the first one and much interest was taken, notwithstanding the "awful" roads over the county at that time.

The meetings were held at the Opera House in Carlinville on February 23-24, 1898, under the management of the following officers: President, David Gore, Carlinville, Illinois; vice-president, Wm. Chew, Carlinville, Illinois; secretary, W. B. Otwell, Carlinville, Illinois; treasurer, S. B. Duggan, Womac, Illinois.

Executive Committee as follows: R. O. Wood, Woodburn; G. W. Grow, Womac; Charles Dewey, Carlinville; Wm. Stoddard, Bushy Mound; Joseph Duckers, Chesterfield; C. L. Steidley, Palmyra, Grant Adams, Nilwood; G. W. Ribble, Fayette; R. E. Oxford, Girard; G. W. Dunby, Nilwood; N. F. Camp, Staunton; C. H. Cogswell, Virden; Frank Hupp, Shipman; James Kelsey, Brighton; Richard Thompson, Carlinville; W. C. Black, Piasa; A. J. Darrah, Medora; S. O. Smith, Girard; James Walker, Scottsville; Thos. Luken, Dorchester, Howard Luken, Hornsby; George Rhodes, Comer; Joseph Chapper, Bunker Hill; Robert Whiteley, Carlinville.

The following committees gave very efficient aid in the management of the institute—Reception Committee and Committee on Music.

The program carried out was as follows:

Thursday, 10 o'clock a. m.

Invocation, Rev. Everhart, Carlinville. Address of welcome, Mayor Charles Gillman. Response, President David Gore. March, Hongroise de Concert, H. Kowalski, (Duo for two pianos) Mrs. F. Meyer, E. A. Just. "Corn and Its Products," E. A. Fursman, El Paso, Illinois

Afternoon session, 1:30.

Prelude and Valse, Op. 34 No. 2, Chopin, E. A. Just. "Horticulture on the Farm," C. A. Cogswell, Virden, Illinois. Soprano solo, "Claribel," Anderson, Miss Abbie Seamen. "Foods and their Preparation," Mrs. H. M. Dunlap, Savoy, Illinois.

Evening session.

Grand March, Triomphale Op. 91, A Gloria, (Duo for two pianos) Mrs. F. Myer, E. A. Just. Vocal solo, selected, Miss Matthews. "The Home and its surroundings," Miss Marie Bronaugh, Virden, Illinois. Overture, mandolin and guitar, selected, Miss Gwin, Mr. Mosser. Solo, "When All the Rest Forsake You," Greely, Miss Kathryn Peebles. "The Farmer and his Boy," (by request) White, Fidelitias Glee Club. Address, C. W. Bliss, Hillsboro, Illinois. Solo, "The Woods," Robert Franz, C. G. Heinz. Piano quartette, A Merry Sleighride, Ed Hoist, (novelty number) Miss Lizzie Steinmeyer, Miss Grace Chiles, Miss Marie Steinmeyer, E. A. Just.

Friday session, 10:00 a. m.

Military Polonaise, Chopin, E. A. Just. "Live Stock," A. P. Grout, Winchester, Illinois. Solo, "Five O'clock in the Morning," Claribel, C. G. Heintz. "Vegetables on the Farm," P. B. Fishback, Carlinville. Piano solo, "Careless Elegance," Kunkel, Miss Kathryn Peebles. "Poultry on the Farm," S. A. Rigg, Palmyra.

Afternoon session, 1:30.

Piano solo, March, Tanhaeuser, R. Wagner, Mrs. F. Meyer. "What the Farmer Should Know About Veterinary Science," Dr. John Denby, St. Louis. Variations on a "Volkslied" Op. 54, Jul Weiss, (piano and violin) Mrs. F. Meyer, E. A. Just. "Two Farms Adjoining—One Pays, the Other Does Not. Why?" Robert C. Morris, Olney, Illinois. "The Relations Between the Farmer and the Merchant," W. F. Burgdorff, Carlinville. Finale, "King Cotton," Sousa, (piano and violin) Mrs. F. Myer, E. A. Just.

MADISON COUNTY FARMERS' INSTITUTE.

The Madison County Farmers' Institute for 1897 was held at Bethalto, Ill., October 28, 29 and 30. The executive committee were: President, Louis A. Spies, St. Jacob, Ill.; vice president, Frank Troeckler, Mitchell, Ill.; secretary and treasurer, Lee S. Dorsey, Moro, Ill.; John S. Culp, Bethalto, and Edward W. Burroughs, Edwardsville. The following programme was rendered:

Thursday evening, 6:15 o'clock.

Music, Bethalto Cornet Band. Piano solo, Wilbur Montgomery. Song, Large Quartette. Prayer, Rev. J. A. Large. Address of welcome, President Village Board, C. F. Bangert, and T. W. L. Belk. Response, L. A. Spies. Recitation, Miss Mida Clark. "Illinois Farmers' Institutes," A. A. K. Sawyer, Hillsboro, vice president Eighteenth Congressional district of Institute. Hon. Oliver Wilson, superintendent Illinois Farmers' Institutes. Prize contests, reading prize papers, John Albisacher first prize essay; F. S. Stakehine, second prize essay. Recitation, Miss Estella Spies. Music, Large Quartette. Opening of Bethalto fair.

L. A. SPIES, President

Friday morning, 9:30 o'clock.

Vocal solo, Miss Eva Starkey. Prayer by Rev J. W. Ritchie. Reports of officers. Appointments of committees. Recitation, Miss Flora Kehne. Topic for discussion, "Results of Experiments with Sugar Beets this Year in Madison County," led by Frank Troeckler. Recitation, Miss Estella Spies. Music.

Friday afternoon, 1:30 o'clock.

Topic, "The Dairy Interests—The Production and Sale of Milk," A. T. Biven's, "A Variation," by a little six year old girl. "How to Make and Market Butter," B. B. Cook. Discussion. Address, "The Necessity of Farm Organization," Hon. Oliver Wilson. Recitation, Miss Lena Klemm. Vocal solo, Mamie Kehne.

Friday evening, 6 15 o'clock.

Music. Song, Large Quartette. Paper, "The Popular Educator," Katherine Stahl. Recitation, Miss Sadie Forman. Paper, "Child Study as Developed by the Most Eminent Educators." Recitation, Miss Cora Anderson. Vocal solo, Miss Cora Young.

Saturday morning, 9 o'clock.

Vocal solo, O. E. Hickerson. Prayer. Reports of committee. Election of officers. Song. Topic, "The Hog," scoring a living hog and demonstrating what a perfect hog should be, F. B. Lemen, Collinsville, Ill. Discussion. Recitation, Miss Lizzie Lanterman.

Saturday afternoon, 2 o'clock.

Music, Bethalto Cornet Band. Song, Large Quartette. Recitation, Alida Bowler. Music. Essay, "The Sunny Side of Farming," Miss Cora Anderson. Recitation Music. Adjournment.

A produce, mechanical and textile fair had been arranged near by. No entrance fee was charged, the money for prizes being raised by subscription for advertising space in our catalogue. The ex-committee thought its president enlisted the good will of County Board of Supervisors and had each appoint three delegates from every township, and a catalogue and programme was sent to every delegate.

The next Institute will be held at Edwardsville, October 18, 19, 20 and 21, 1898.

The following are the officers elected for the ensuing year: President, L. A. Spies, St. Jacobs; vice president, F. Troeckler, Mitchell; secretary and treasurer, L. S. Dorsey Moro, Ill.

MARION COUNTY FARMERS' INSTITUTE.

The Marion County Farmers' Institute was organized on February 1, 1898, by the election of the following officers: John M. Green, president, Salem; A. Coffin, vice president, Brubaker; secretary, W. K. Shook, Salem; treasurer, W. C. McClelland, Sandoval. Executive committee, J. M. Green, A. Coffin, W. K. Shook, W. C. McClelland and Gilbert Boggs, Walnut Hill. It was decided to hold a meeting at the court house, in Salem, on February 10 and 11, 1898. Said meeting as called was advertised in the several county papers. The executive committee went to work with a will to prepare program, solicit speakers and papers to be read at the Institute in the space of ten days or two weeks, and it is gratifying to report the meeting was far ahead of anything anticipated by any of those who attended, and demonstrated that any county can hold a very interesting meeting on short notice, if there is but the will to succeed.

The executive committee prepared the following program:

Tuesday, February 10th.

JOHN M. GREEN, President.

Opening address by the president, J. M. Green. Prayer, Rev. S. P. Young. Paper,

"Raising Hogs for Profit," J. R. Baker, of Tonti. Discussion of topics, R. C. Morris. Paper, "Tile Drainage as An Investment," H. V. Cook, of Odin.

Afternoon session, 1:30 o'clock

Meeting called to order by president. Song, by Allman Trio. Discussion of tile drainage, by Messrs. Huff, Mendenhall, Meridith, and many others. On motion speakers were limited to five minutes each. Paper, "The Home," Mrs. Allie Martin, of Salem. Paper, "Horticulture in Marion County," by E. G. Mendenhall, of Kinmundy. Address, "Sofa Beans and Other Leguminous Plants," R. C. Morris, of Olney. General discussion.

Friday, February 11, 1898, morning session, 10:00 o'clock.

Institute called to order by president. Prayer, Rev. B. Depenbrock. Paper, "The Flower Garden," Miss Jennie Spenser, Salem. Discussion.

Afternoon session, 1:15 o'clock

Called to order by president. On report of committee on nominations the following officers were elected for the following year: President, John M. Green, Salem; vice president, A. Coffin, Brubaker; secretary, W. C. Shook, Salem; treasurer, W. C. McClelland, Sandoval. Township vice presidents, Harvey Leckrone, Alma; John Robinson, Odin; J. D. Telford, Salem; L. K. Boynton, Stevenson. E. M. Coffman, Iuka; W. S. Perrine, Centralia; Gilbert Boggs, Raccoon; H. B. Wham, Haines; Henry Ray, Tonti; S. H. Dolson, Sandoval; A. Nepper, Kinmundy, and N. B. Wells, Romine.

E. G. Mendenhall made a talk in the interest of Marion County Horticultural Society. Paper, "Kindergarten in City and Country," Mrs. A. Torrance. Address, "Wounds, and How to Treat Them," Dr. Donald McIntosh, of Champaign. Paper, "Strawberries," B. C. Warfield, of Sandoval. Address, "Experiments with Soils of Marion County," Prof. Eugene Davenport, of Champaign. Short addresses by L. N. Beal, of Mt. Vernon, and W. R. Kinsey, of Tamaroa.

Chair appointed as delegates to Illinois Farmers' Institute, to be held at Champaign, E. G. Mendenhall, Walter Cope and B. C. Warfield. Suitable resolutions having been adopted, the Institute adjourned subject to call of the executive committee. Our program had cards of our business men and firms thereon.

MARSHALL COUNTY FARMERS' INSTITUTE.

The seventh and last annual meeting of the Marshall County Farmers' Institute was held in Lacon, Illinois, Wednesday and Thursday, January 5 and 6, 1898, under the following management: President, J. A. Williams, Henry; Vice President, R. W. Iliff, Washburn; Secretary and Treasurer, Elmer Quinn, Henry. Executive Committee—S. S. Merritt, Henry; H. C. Crooks, Lacon, C. E. Burt, Whitefield.

The programme of the Institute meeting held Wednesday and Thursday, January 5 and 6, 1898, is as follows:

Wednesday Morning Session—10 a. m.

Prayer, Rev. L. K. Long, Lacon. Address of welcome, Rev. L. K. Long, Lacon. Agricultural Education and How to Obtain It, a paper, by County Superintendent of Schools M. M. Mallory, Lacon. Is an Acre of Corn as Profitable as an Acre of Potatoes, Taken for a Number of Years? J. H. Beagley, Sibley; discussed by T. W. Stoner, Hopewell, and Wm. Worley, Henry. Culinary Art, paper, by Geo. W. E. Cook, Lacon.

Recess to 1:30 p. m.

Benefits of the Agricultural Press to the Farmers, paper, J. M. Kirkpatrick, Henry; discussed by H. K. Smith, Mt. Pulaski, and A. P. Webber, Saratoga.

J. A. WILLIAMS, President.

What Can be Done to Lessen the Toils of the Farmer's Wife and Make the Home More Attractive? paper, by Mrs. Teamer Sparland, discussed by Mrs. Joe Miller, Wenona, and Mrs. B. C. Vail, Henry. What Kind of Poultry is the Most Profitable on the Farm? paper, by U. G. McAdams, Wenona; discussed by W. C. Griffith, Clear Creek, and St. Clair Bullman, Lacon.

Evening Session, 7 o'clock.

Prayer, Rev. D. G. Murray, Lacon. Solo, Mrs. Ed Maftzger, Lacon. Essay, Miss Emma Strun, Lacon. Song, Male Quartette.

Literary contest by the school pupils of the county. One scholar to be chosen from each township. Contestants to be divided into two classes, i. e., orations and declamations. Declamations to include scholars of 15 years or under. Orations to include scholars of any age. No pupil to enter more than one class. Literary contest in charge of Supt. M. M. Mallory. Declamations, 1st prize, \$3.00, by Institute; declamations, 2d prize, \$2.00, by Institute; orations, 1st prize, \$3.00, by Institute; orations, 2d prize, \$2.00, by Institute.

Admission to evening entertainment, 10 cents.

Thursday, January 6th—9:30 o'clock a. m.

Prayer, Rev. E. K. Reynolds, Lacon. Scrub Stock vs. Scrub Farmer, paper, I. M. Forbes; discussed by John Turnbull and Reuben Broadus. Benefits of Agricultural Statistics to the Farmer, paper, by Bernard A. Snow, Chicago; discussed by S. W. McCulloch and Jos. Miller, Wenona. Some Mistakes and Farm Leaks, paper, by E. R. Hannum, Lacon.

Recess to 1:30 p. m.

Election of officers. Would Postal Savings Banks be Beneficial to the People? paper, by Willis B. Mills, Clear Creek; discussed by H. T. Ireland, Washburn, and C. H. Justice, Lacon. How Shall We Maintain the Fertility of Our Soil? a paper, by O. Wilson, Magnolia. Question box.

The Marshall County Farmers' Institute, held in Lacon January 5 and 6 was a success. The court house was filled up at every session. The corn and butter show was fine; also fruit. The evening entertainment was good; a large crowd attended.

The following officers were elected for the year: President, Alfred Judd; Vice President, C. J. Held, Lacon; Secretary and Treasurer, Elmer Quinn, Henry. Executive Committee—M. J. French, Joseph Miller, C. E. Burt.

The next meeting to be held at Wenona.

MASON COUNTY FARMERS' INSTITUTE.

The Mason County Farmers' Institute was organized in 1881 and has held one Institute each year since that time, and during the last two or three years the interest in the meetings is greatly on the increase.

The last annual Institute of Mason county was held at Forest City, Illinois, Wednesday and Thursday, December 8-9, with an evening session on the 8th, under the following management: President, G. O. Hopping, Havana; vice-presidents—one from each township; secretary, Eugene Mathers, Teheran; treasurer, Geo. Mathers, Mason City. Executive Committee—S. F. Porter, Mrs. Robert Cross, S. B. Spear, Mason City; Mrs. J. C. Cleveland, Mason City; Mrs. Dollie L. Harphan, Havana.

The Executive Committee had full control of the program and advertising and the appointment of all sub-committees. The program of the Institute held December 8-9 is as follows:

G. G. HOPPING, President.

Wednesday, 10 a. m.

Institute called to order by the President. Invocation by Rev. C. F. Kiest. Reading the minutes of the last meeting and the reports of the officers of the preceding year. Music by the Topeka Orchestra. Address of welcome by Mayor H. Scott. Response by G. G. Hopping, President.

Afternoon session, 1.30

Prayer by Rev. Kiest, of Bishop. Election of officers for the ensuing year. "Everyday Farming," by C. E. Kiest. Discussion of same, led by S. F. Porter, and engaged in by any one present who wished to ask the speaker any questions relative to the subject. The next topic, "Corn Culture," was to have been presented by Mr. Fursman, but not being present the members of the Institute took up the question and much valuable information was gained by the discussion which followed. The session closed by a recitation by Miss Gertie White, followed by a song by the Pleasant Plains Male Quartette.

Evening session, 7:30.

The Forest City Choir sang several selections, after which "Education from a Practical Standpoint" was presented by J. E. Barnes in a well written paper. The discussion was led by W. R. Barnes, which became general. Recitation by Miss Nora Barringer, Forest City. Music by the choir.

Thursday morning, 9.30.

Prayer by Rev. Kiest. "Fruit for the Farm," C. E. Himmel, Bishop. Discussion, "Farm Stock." Topic opened up by Dr. Cogdall, Forest City. General discussion. For lack of time the topic "Conservation of the Soil," was not thoroughly discussed.

Afternoon session, 1:30.

Mrs. Dollie Harphan presiding. Song, "America," by Institute. Prayer by Rev. Spatts. Paper, "Vegetable Physiology," Mrs. Paul Eulow, Mason City. Vocal selection, Miss Grace Hyde, Havana. Paper, "A Week's routine in the Farmer's Household," Mrs. Sowers, Topeka, Illinois. Discussion. Vocal selection, Mrs. Henry Adams, Forest City. "The Science of Cooking," Miss Lena McHarry, Mason City. Discussion, Mrs. L. Clauser, Havana. General discussion.

MASSAC COUNTY FARMERS' INSTITUTE.

At a meeting of the farmers of Massac County at the Court House, Metropolis, June 22, 1898, a County Farmers' Institute was organized. The following are the officers elected for the ensuing year, viz.: President, Fowler A. Armstrong, Massac Creek; vice president, Green W. Smith, Samoth; secretary, Andrew Davison, Metropolis; treasurer, J. F. McCartney, Metropolis; executive committee, John W. Stewart, Grinnell, W. A. Spence, New Columbia, Wm. T. Cockerill, George Neborg, Richard Borman, the last three of Metropolis.

MCDONOUGH COUNTY FARMERS' INSTITUTE.

The last annual meeting of the McDonough County Farmers' Institute was held in Macomb, Ill., Wednesday and Thursday, November 10 and 11, 1897, under management of President F. L. Hankins, of Sciota, Ill., Secretary H. E. Billings and Treasurer Geo. W. Reid, both of Macomb, Ill. The meeting was called to order by the Rev. F. L. Hankins. Prayer was offered by Mr. S. Blackstone, of Pennington's Point, Ill. The first question, "In What Crops Did the Farmer Fail Last Year, and Why?" was opened by S. Blackstone, followed by Hon. G. W. Dean, of Adams, Ill. "Corn" was next discussed by Hon. G. W. Dean, followed by John Blazer, of Macomb, and Wm. Webb and A. R. Strickle, both of Good Hope, Ill. Topic, "Bees, Honey, Sorghum, Beets, Sweets and Their Value," was discussed by the President, F. L. Hankins, of Sciota, Ill. Essay, "Home Life on the Farm," by Miss Elva H. Gilchrist, of Hills Grove, Ill. "McDonough County Fair, Its Use and Abuse," called forth a spirited discussion pro and con from a large number of members of the Institute.

Thursday, 10:00 a. m., the meeting was called to order by the President. Prayer was offered by Mr. Joseph McCandless, of Macomb. Song, "He Is Able to Deliver," by J. S. Gash. "Can We Raise Corn With Profit?" discussed by John Wayland, of Macomb. The next topic, "Feeding Corn," by John Blazer, of Macomb, followed by S. Blackstone, Pennington's Point, and Joseph McCandless and Samuel Hushaw, of Macomb.

Afternoon session, 1:30 p. m.

Meeting called to order by the President, F. L. Hankins. Music. "Good Roads," discussed by D. McMillan, followed by Hon. G. W. Dean. "The American Farm" was the next topic discussed, by the Hon. G. W. Dean. "Fruit Culture," by O. M. McElvain of Scottsburg, Ill., was the last topic. Question box. Election of officers for the ensuing year resulted as follows: President, A. R. Stickle, Good Hope, Ill.; secretary, Frank Hankins, Sciota, Ill.; treasurer, Wm. Webb, Good Hope, Ill. Adjourned.

We will hold our next meeting at Macomb, November 15-16, 1898, under the management of the new officers, with the help of the following executive committee: D. McMullan, Geo W. Reid and John W. Wayland, all of Macomb; Wm. Webb, of Good Hope, Ill., and O. M. McElvain, Scottsburg, Ill.

We make out our program by calling together the executive committee, and having each member bring forth topics for discussion and selecting speakers for same.

We advertise through the county papers and by distributing printed programs of the meeting freely among the farmers.

We had a good exhibition of apples, corn, cane, vegetables, butter, and some peanuts grown by the president, F. L. Hankins.

McHENRY COUNTY FARMERS' INSTITUTE.

The regular annual meeting of the McHenry County Farmers' Institute was held at Woodstock, Ill., Thursday and Friday, January 27 and 28, under the following management. President, M. Zimpleman, Marengo; vice-president, George A. Hunt, Greenwood; secretary, Frank T. Barnes, Woodstock; treasurer, E. H. Cook, Huntley; executive committee, F. C. Wells, Harvard; C. W. Harrison, Ringwood; R. W. Overton, Richmond; Samuel Clark and G. E. Burbank, Woodstock.

The Executive Committee is greatly to be commended for the pains taken to secure the best talent and those interested in agriculture showed their appreciation by a large attendance at all sessions. The following program was rendered:

Thursday, 10:30 o'clock a. m.

Prayer, Rev. S. C. Hay, Woodstock. Address of welcome, Mayor E. C. Jewett, Woodstock. Response, M. Zimpleman, Marengo. Secretary's and treasurer's report. Question box.

Afternoon session, 1:30 o'clock.

Prayer, Rev. R. B. Guild, Woodstock.

M. ZIMPLEMAN, President.

Music, Mills' Band. "The Future of Horse Breeding," M. W. Dunham, Wayne. Discussion. "Special Breeds of Dairy Cows," B. F. Wyman, Sycamore. Discussion. "Value of Corn Fodder," Will Dyer, Alden, C. W. Sylvester, Marengo. Discussion. "The Silo and Silage Feed," Samuel E. Clark, Woodstock; M. B. Metcalf, Marengo. Discussion. "Does it Pay to Buy Feed for Dairy Cows," W. A. Boies, Marengo. Discussion.

Evening session, 7:30 o'clock.

Prayer, Rev. N. A. Sunderlin, Woodstock. "Farming Interests of McHenry County", V. S. Lumley, Woodstock. Song, Male Quartet, Woodstock. "The Farmer Boy," Rev. E. J. Rose, Marengo. Song, Ladies' Quartet, Marengo. "Household Economy," Mrs. A. R. Parkhurst, Marengo. Song, Ladies' Quartet, Woodstock. "The Social Side of Rural Life," Mrs. C. W. Allen, Woodstock. Song, Male Quartet, Marengo. "The Farm Home," E. S. Fursman, El Paso. Song, Male Quartet, Woodstock. "Rural Free Mail Delivery," Hon. J. M. Stahl, Chicago. "Hard Roads," J. J. Murphy, Woodstock. Song, "America," by the audience.

Friday, 10:30 o'clock a. m.

Prayer, Rev. Stevens, Woodstock. "Tile Drainage and its Benefits," H. T. Thompson, Huntley; C. H. Tryon, Woodstock. Discussion. "Feeding Cattle for Market," Jas. King, Rockford; C. Thompson, Woodstock. Discussion. "Sheep Raising," Geo. McKerrow, Sussex, Wis. Discussion.

Afternoon session, 1.30 o'clock.

Prayer, Rev. S. C. Hay, Woodstock. "Management of the Dairy," W. R. Hostetter, Mt. Carroll. Discussion. "Fruit on the Farm," A. F. Moore, Polo, President State Institute. Discussion. "Diversified Poultry Farming," Mrs. R. A. Judy, Decatur. "Corn Culture," E. S. Fursman, the "Corn King of Illinois." "Swine Breeding," A. J. Lovejoy, Roscoe; C. H. Everett, Beloit, Mgr. Wis. Institutes. Discussion. Election of officers and location of next Institute.

The officers who will preside the ensuing year are: President, George A. Hunt, Greenwood; vice-president, William A. Saylor; secretary, George L. Murphy, Woodstock; treasurer, E. H. Cook, Huntley; Executive Committee, F. C. Wells, G. W. Harrison, R. W. Overton, Samuel Clark, G. E. Burbank.

MCLEAN COUNTY FARMERS' INSTITUTE.

The annual meeting of the McLean County Farmers' Institute was held at Bloomington, Ill., Thursday and Friday, January 13 and 14, 1898, under the following management: President, Capt. S. N. King, Normal; secretary, L. E. Skaggs, Danvers; treasurer, F. L. Gaston, Normal. Executive committee, Eugene G. Funk, D. R. Stubblefield and Henry Ringhouse. The members of the following committees contributed greatly to the success of the meeting, which was one of the best ever held in the county, viz.: Program, premiums, decorations, reception and exhibits.

The program of the Institute meeting held January 13 and 14, 1898, is as follows:

Thursday morning, January 13, 1898, 10 o'clock a. m.

Music. Song, "America," by the audience. Prayer, Rev. T. J. Humphrey, Bloomington; Inauguration of President-elect Capt. S. N. King. Vocal solo, Miss Mae Donner. Reading of the prize essays. "What Constitutes a Successful Farmer," W. E. Snively and Joseph Rengle. "Care, Kind and Value of Sheep," Hon. Jacob Zeigler, Clinton. Music, "Trees on the Farm," Geo. J. Foster, Normal.

S. N. KING, President.

Afternoon session, 1:30 p. m.

Music. "Twelve Years of Experience with Alfalfa in McLean County," John Feuchte, Bloomington. "How I Raised 160 Bushels of Corn Per Acre," E. S. Fursman, El Paso, Ill. Vocal solo, Miss Isabelle Stevick. "Better Foods and Better Methods in Our Homes," Mrs. Senator Dunlap, Savoy. "Clover," Prof. Joseph Carter, Champaign. Recitation, "A Pledge with Wine," Miss Lydia V. Rodgers. "The Kind of Horses to Raise for Profit," F. J. Berry, Chicago.

Friday morning, January 14, 1898

Prayer, Rev. Stanley McKay, Bloomington. "The Hen as a Rent Payer," W. E. Snively, Hudson. "How I Make and Market 25 Cent Butter," Joseph Rengle, Danvers. Vocal solo, Miss Clotilda Herdman. "Cheapest Milk Production, or How to Make Butter as a Food Cost 8 Cents a Pound," A. G. Judd, Dixon. Recitation, "The Face Upon the Floor," Miss Maud Light, Bloomington. Opening of the Question Box, conducted by L. E. Skaggs, Danvers. Vocal solo, Miss Vera Peck, Bloomington. Adjournment.

The next meeting of the McLean County Farmers' Institute will be held in Bloomington, Ill., January 10 and 11, 1899, under the auspices of the president, L. E. Skaggs, Danvers; vice president, M. P. Lantz, Carlock; secretary, H. Ringhouse, Bloomington; treasurer, C. C. Wagner, Gallam. Executive committee, D. R. Stubblefield, Coel; W. E. Snively, Hudson; T. F. Kennedy, Colfax; J. M. Anthony, Bloomington; Oscar Bonnett, LeRoy, and W. J. Barnes, McLean.

The meeting of 1898 was considered by all to be the best ever held in McLean county. The attendance was about 1,000, and the officers experienced great difficulty in securing rooms to accommodate all who attended. The exhibits were very large and good and the prizes given by the business men of Bloomington and Normal were valuable and useful and were very much appreciated by the winners. Our aim has always been to keep the management of the Institute in the hands of the farmers, and in making out our programs we always try to secure good and practical farmers on our program. We have only held three annual Institutes in this county, but the interest is growing, and great good has been accomplished by what has already been done. We hope by next year to be able to secure the Coliseum now being built in Bloomington, and will be able to accommodate all who may attend.

MENARD COUNTY FARMERS' INSTITUTE.

The third annual Farmers' Institute meeting of Menard county was held in the Court House in Petersburg January 18 and 19, 1898, under the management of the following named officers: Fred H. Rankin, of Athens, President; J. M. Johnson, of Petersburg, Vice President; H. A. Wood, of Petersburg, Secretary; J. F. Bergen, of Petersburg, Treasurer; Executive Committee, J. S. Miles, R. Y. Kincaid, A. J. Smedley, R. C. Painter, T. H. Alkire. The following committees aided very materially in making the meeting a success, viz: Committees on Program, Exhibits and Music.

The following is the program of the last meeting:

Tuesday, January 18, 1898—9:30 a. m.

President Fred H. Rankin presiding, called the house to order; music by Manhattan Glee Club; prayer by Rev. Harris, of Greenview; address of welcome by John M. Smoot, response by J. M. Johnson; report of the Secretary, H. A. Wood; report of Treasurer J. F. Bergen; paper, "The All Purpose Horse," by Geo. Williams, of Athens; "Our Cattle Interests" was next taken up and discussed by Judge H. H. Marbold, of Greenview, and S. D. Masters, of Jacksonville, the latter discussing the subject from the feeder's standpoint; adjourned.

Tuesday afternoon, 1:30.

The session was opened by music on mandolin and guitar by Louis Miasman and Samuel Armstrong; prayer by Rev. Stevenson; paper by J. W. Hillstern, of Atterberry, on "Township High Schools"; "Swine Breeding and Raising," discussed by President Fred H. Rankin of Athens, Frank Whitney of Athens, and F. E. Bone of Rock Creek.

F. RANKIN, President.

Tuesday afternoon.

Recitation by Harmon Grosball; paper, "Our Poultry Interests," by Mrs. Jennie Culver, of Athens; music; paper, "How the Farmer's Wife Can Help Pay off the Mortgage," by Mrs. Lizzie Warring, of Petersburg; paper by Benjamin Buckinson, of Sangamon county, entitled, "Small Fruit Culture," read by I. H. Beard; nominating committee appointed.

Tuesday evening

Opened at 7:30 by music, after which prayer was offered by Supt. R. D. Miller, recitation by Miss Lucy Lewis, entitled, "How Tom Left the Farm." The unavoidable absence of Hon. H. J. Tice and Elder Chas. Smoot, who were assigned prominent parts in the program, shortened the session. E. S. Fursman, of El Paso, Ill., addressed the Institute upon the subject, "The Farm Home."

Wednesday morning, 9:30.

President Rankin presiding; meeting opened with song by the Manhattan Glee Club, who in response to an encore sang "Old Kentucky Home"; prayer by Elder J. E. Davis, of Petersburg; "Practical Gardening," by Andrew Allison, of Springfield, read by I. H. Beard and discussed by W. W. Baker, of Tallula, and Wm. Helstern, of Atterberry; paper, "Cattle Breeding and Feeding," was read by Robert Grimsley, of Sweetwater, Ill.; Mr. A. C. Rice, President Morgan County Institute, discussed the subject, by invitation of President Rankin; a paper by Rev. E. Worth, of Athens, on "Taxation, Its Necessity, Inequality and Results," was well received. This closing the morning session Institute adjourned until 1 p. m.

The afternoon session opened with music from the Petersburg Juvenile Orchestra, composed of Kirk Oustatt, James Wilmott, Roy Elam and Phil Leese, after which prayer was offered by Elder Clayborn Hall, of Athens; a paper by Rev. R. D. Miller, County Superintendent of Schools, on "Common Schools as a Factor in Successful Agriculture"; recitation by Carl Culver, of Athens; music by Smith, Peck, Rev. Thos. J. Stevenson and H. C. Levering; "Corn Culture," by E. S. Fursman, of El Paso, Ill. This closed the program of the most successful Institute held in the county.

The exhibits made during the Institute of the various farm, dairy and kitchen products, under the efficient management of A. N. Curry, was one of the most interesting and profitable features of the Institute work. Much credit is due the merchants and business men of the county for the liberal awards offered to the various departments for exhibits made.

The following are the officers for the ensuing year: President, H. A. Wood, Petersburg; Vice President, Geo. Williams, Athens; Secretary, I. H. Beard, Petersburg; Treasurer, J. F. Bergen, Petersburg; Executive Committee, A. J. Smedley, R. C. Painter, J. S. Miles. The next meeting will be held at Petersburg January 17-18, 1899.

MERCER COUNTY FARMERS' INSTITUTE.

The tenth annual meeting of Mercer County Farmers' Institute was held at Joy, Ill., December 9 and 10, 1897, under the management of the following officers: President, Alva Jay, Sunbeam; Vice President, P. M. Carnahan, Viola; Secretary, J. W. McCreight, Suez; Treasurer, Frank Holmes, Viola.

Institute opened with prayer. The following subjects were discussed: Merits of Different Breeds of Cattle, Grape Culture, Corn Culture, Home and Home Adornment, The Education of Sons and Daughters of the Farmers, election of officers, Coöperation of Landlord and Tenant, Small Fruit on the Farm, awarding of premiums.

The Institute was well attended. W. S. Fursman gave us a fine talk on Corn Culture and Small Fruits and helped to make our Institute a success.

The Institute offered premiums on 15 different articles of \$1.00 for first and 50 cents for second, to-wit: Bread, butter, early potatoes, late potatoes, winter wheat, spring wheat, oats, rye, yellow corn, white corn, mixed corn, pop corn, sweet corn, timothy seed, clover seed. There was over 50 entries in all and a lively competition for first place and all entries were a credit to the farmers of our county. The Institute was a success throughout.

A second meeting of one day and evening was held at Seaton, Ill., February 10, 1898, and was a very interesting and successful meeting. The programme was as follows:

FORENOON—10:00.

Music. Invocation, by Rev. Robb. Poultry for Profit, paper, by Fred Crosby. Discussion by W. J. Palmer. The Farmer's Fruit Garden, paper, by R. H. Pepper. Discussion by John Henry.

AFTERNOON—1:30.

Music. How Can We Retain the Moisture in Our Soil? paper, by Elisha Lee. Discussion by Alva Jay. Can We Raise Our Own Potatoes, paper, by Scott Cabeen. Discussion by John Candor. How Can the Farmer Best Secure Legislation in His Interest? paper, by C. E. Bentley. Discussion by Josh Cabeen. The Farm Dairy: (1) Care of Cows, (2) Care of Milk, paper, by John Montgomery. Discussion by J. A. Logan.

EVENING—7:30.

Music. The Farmer as a Business Man, paper, by Thomas Kiddoo. Discussion by W. L. Candor. What Can a Woman do on a Farm that will Return a Revenue, paper, by Mrs. Martha Wheeler Ballard. Discussion by Mrs. Fannie Cabeen. Music.

The following officers were elected for the ensuing year: President, T. M. Carnahan, Viola; Vice President, John Montgomery, Aleck; Secretary, R. M. Pinkerton, Viola; Treasurer, J. G. Haverfield, Joy.

The next meeting will be held at Aledo January 17-18, 1899.

MONROE COUNTY FARMERS' INSTITUTE.

A County Farmers' Institute has not yet been organized in this county.

MONTGOMERY COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Montgomery County Farmers' Institute was held at Hillsboro, Ill., Wednesday and Thursday, January 12 and 13, 1898, under the following management: President, Wm. A. Young, of Butler; vice president, Robert Bryce, Butler; secretary, E. C. Richards, Hillsboro; treasurer, A. A. K. Sawyer, Hillsboro; executive committee, E. J. File, Hillsboro, S. E. Simonson, White Oak, A. A. Betty, Witt, J. D. Kendall, Wagoner, J. H. Rainey, Butler.

The Institute was called to order Wednesday morning at 10 o'clock, and the managers were pleasantly surprised at the large attendance. The following programme was rendered:

Morning session, 10 o'clock

Music, Ladies' Quartette, Butler. Opening prayer, Rev. A. H. Reat, Hillsboro. Address of welcome, Mayor D. C. Best. Response, President Wm. A. Young, Butler. Reading minutes, Secretary E. C. Richards. Report of treasurer, A. A. K. Sawyer. Music, Male quartette, Hillsboro. Address, "Horticulture and Fruits for the Farm," John Hartley, Reno, Ill. Election of officers.

HON. W. A. YOUNG, President.

Afternoon session, 1 o'clock.

Music, ladies' quartette, Butler. Paper, "Can Small Farms Be Made to Pay?" Peter Hershey, Audubon. Discussion. Address, "Corn Culture," Hon. E. S. Fursman, El Paso, Ill. Discussion. Paper, "How I Raise Corn in Montgomery County," John Landers, Van-burenburg. Music, male quartette, Hillsboro. Paper, "Agricultural Chemistry," George Zink, Litchfield, Ill. Discussion. Address, "How Far Can Agricultural Chemistry Be Taught in Our Public Schools?" Prof. Josiah Bixler, principal public schools, Hillsboro, and Prof. M. L. McIntyre, principal public schools, Nokomis, Ill.

Evening session, 6:30 o'clock.

Music, ladies' quartette, Butler; mandolin club, Hillsboro. Paper, "The Duties of Country School Directors," Hon. W. H. Groner, County Superintendent schools. Recitation, Miss Ida Turner, Butler. Music, mandolin club; ladies' quartette. Paper, "Farm Homes," Hon. E. S. Fursman, El Paso, Ill. Recitation, Miss Addie Dryer, Butler. Paper, "Women in Education," Mrs. Mary Turner Carriel, Jacksonville. Music, ladies' quartette; mandolin club.

Morning session, 9 o'clock.

Opening prayer, Rev. Ezra Keller, Hillsboro. Music, ladies' quartette, Butler. Paper, "Wounds, and How to Treat Them," Prof. Donald McIntosh, V. S., State University, Champaign, Ill. Address, "Veterinary Science," John Turner, Butler. Paper, "Dairying," Fritz Monk, Litchfield. Discussion. Music, male quartette, Hillsboro. Address, "Clover as a Fertilizer, and its Influence on Other Crops," Dr. W. H. Cook, Coffeen, Ill. Paper, "Mixed Husbandry," Abe Brokaw, Litchfield.

Afternoon session, 1 o'clock.

Music, ladies' quartette. Paper, "The Relation of the County to the State Institute," Hon. Oliver Wilson, Superintendent of Illinois Farmers' Institute. Paper, "The Cattle Industry of Today," Edward Grimes, Raymond, Ill. Discussion. Paper, "How Much of the Science of Botany Should a Farmer Know?" Miss Mina Klemme, Butler. Address, "Insects Injurious to Agriculture," S. A. Forbes, State Entomologist. Music, male quartette, Hillsboro. Address, "Wheat and Corn," J. B. Cromer, Irving, Ill. Paper, "Sugar Beet Culture," Prof. P. J. Holden, University of Illinois, Urbana. Address, "Raising Sugar Beets in Montgomery County," Geo. W. Wilson, Donnellson.

Evening session, 6:30 o'clock.

Music, ladies' quartette, Butler. Recitation, Miss Orilla Washburn, Butler. Music, mandolin club, Hillsboro. Address, "Home in the Country," Rev. J. H. Hawk. Music, male quartette, Hillsboro. Address, "Systematic and Postal Savings," J. E. Colvin and Hon. Chas. A. Ramsay. Recitation, Miss Inez Rush, Hillsboro. Music, ladies' quartette, Butler. Recitation, Miss Anna Bartlett, Hillsboro. Music, mandolin club, Hillsboro. "Round Up," Hon. C. W. Bliss.

The following are the officers elected: President, Wm. A. Young, Butler; vice president, Edward Grimes, Raymond; secretary, E. C. Richards, Hillsboro; treasurer, A. A. K. Sawyer, Hillsboro. The next meeting will be held at Hillsboro, October 25-27, 1898.

MORGAN COUNTY FARMERS' INSTITUTE.

The fourth annual meeting of the Morgan County Farmers' Institute was held Wednesday, Thursday and Friday, December 1, 2 and 3, 1897, in Conservatory Hall, Jacksonville, Ill., under the following management: President, A. C. Rice, Arnold; secretary, H. L. Doan, Jacksonville; treasurer, C. S. French Chapin, Jacksonville; Executive Committee, Stanfield Baldwin, Jacksonville; Mrs. Belle P. Drury, Orleans; A. C. Rice, H. L. Doan and C. S. French.

The program proved to be very interesting and was as follows:

Wednesday, 10 a. m.

Call to order. Prayer, Rev. A. B. Morey. Music. Address, Mayor Albert J. Holley. Response, President A. C. Rice. Music. "My Experience in Cattle Feeding," Samuel Dinwiddy. Discussion, S. D. Masters, Isaac Tindall and Chas. Conover.

Wednesday, 1.30 p. m.

Music, baritone solo, R. M. Hockinbull. "Breeding and Management of the Hog," S. O. Berryman. Discussion, Isaac Watson, Peter Meggenson and A. J. Boston. "Women in Education," Mrs. F. H. Carriel. Music, baritone solo, R. M. Hockinbull. "Waste on the Farm," Chas. A. Rowe.

Thursday, 10 a. m.

Prayer, Dr. F. S. Hayden. Vocal solo, Miss Grace Buxton. "Propagation and Culture of Berries, Tree Fruits and Nuts," L. H. Callo way. Quartette, Misses Grace Buxton and Marion Kirby and Messrs. F. R. Brown and H. G. Barnes. "Agricultural Progress, Past, Present and Future," Prof. Eugene Davenport, Champaign. Vocal solo, Miss Grace Buxton. General discussion on clover.

Afternoon session, 1:30.

Vocal solo, Miss Phoebe Kreider. "Better Foods and Better Methods in Our Homes," Mrs. H. M. Dunlap, Savoy, Ill. Piano solo, Miss Blanche Massie. "Tillage," F. H. Rankin, Athens, Ill. Vocal solo, Miss Phoebe Kreider. "Corn Culture," E. S. Fursman, El Paso. Music for this session furnished by Illinois College of Music.

Friday, 10 a. m.

Prayer, Dr. L. B. Richards. Music, "The Handicap Maid" (Rosey) Orchestra. "The Farm Home," E. S. Fursman. "The Future of the Horse," Samuel Crum. Discussion, H. H. Massey, C. B. Joy and Gates Strawn. Vocal solo, "Ever True," Miss Gussie Janzikowski. Election of officers.

Afternoon session, 1:30 p. m.

Music, "X Ray Waltz," orchestra; "Floral Adornment of the Country Home," Mrs. James Dewesse. "Poultry on the Farm," M. W. Summers, Curran, Ill. Violin solo, Master Ruben Hortman. "Sunshine and Shadow of Farm Life," Miss Etta Blackburn. Music for Friday was furnished by the orchestra of the Illinois Institution for the Blind.

All topics were followed by general discussion, and a Query Box was an important factor. The attendance and interest were better than at any previous meeting of the Institute.

The program was prepared by a special committee and was printed in pamphlet form, carrying a great many advertisements, and proved to be quite a source of revenue. Hundreds of the programs were sent out to the farmers all over the county several days before the meeting as a means of advertising the Institute. The next meeting of the Institute will be held in Jacksonville about the middle of October 1898. The officers for this year are: President, A. C. Rice, Arnold; vice-president, William Stevenson, Jacksonville; treasurer, A. A. Dyer, Jacksonville; secretary, H. L. Doan, Jacksonville.



A. C. Rice, President.

MOULTRIE COUNTY FARMERS' INSTITUTE.

The Moultrie County Farmers' Institute was organized June 13, 1898, and the following officers were elected. President, T. H. Crowder, Bethany; vice-president, G. W. Vaughan, secretary, O. B. Lowe, treasurer, Charles Shuman, all of Sullivan. Executive Committee, T. C. Kearney, Lovington; Henry L. Dick, Pierson; Pat Griffin, Dalton City; J. H. Martin, Allenville; Al Treat, Gays. J. R. Bean, Sullivan.

OGLE COUNTY FARMERS' INSTITUTE.

The last meeting of the Ogle County Farmers' Institute was held at Forreston, Illinois, Tuesday and Wednesday, February 1-2, 1898, under the following management: President, Jacob F. Swank, Forreston; vice-president, J. L. Moore, Polo; secretary and treasurer, Charles Walkup, Oregon. Executive Committee—Jacob F. Swank, Forreston; Charles Walkup, Oregon; A. F. Moore, Polo; A. W. Brayton, Mt. Morris; C. T. King, Kings; James Graham, Stillman Valley; Frank W. March, Daysville.

The Executive Committee arranged for the day programs and the following local committee for the evenings' entertainment: Mrs. Y. F. Haller, Henry Billig, Miss Abbie Fager, Miss Lizzie Duhl and Heenan Colvin.

The Program of the Institute meeting held February 1-2, 1898, is as follows:

Afternoon session, 1:00 o'clock.

Invocation, by Rev. J. L. Mayer, pastor of the Zion Reformed Church of Forreston. Address of welcome, Rev. Wm. H. Hartman, of Forreston. Response, Amos F. Moore, of Polo. Paper, "Rotation of Farm Crops," Charles W. Johnson, of Grand Detour, Illinois. "Farmers' Clubs and Club Rooms," Roy Sweigert, Dixon, Illinois. Adjournment.

JACOB F. SWANK, President.

Evening session, 7:00 o'clock.

Part I—Overture, Forreston Orchestra. Paper, "Household Economics," Mrs. C. L. Swelgart, Dixon, Illinois.

Part II—Music, orchestra. Chorus, octette, Mrs. Haller, Miss Abbie Fager, sopranos; Miss Addie Swank, Lizzie Duhl, altos; G. F. Knapp, Harry Lebo, bass; Charles Fager, L. Veley, tenors. Reading, Miss Della Ione Billig. Piano solo, Fred Colvin. Reading, Miss Emma Nazarene. Soprano solo, Mrs. Haller. Reading, Miss Abbie Fager. Vocal solo, Mrs. Calvin A. Beebe. Reading, Miss Eliza Canode. Chorus, octette. Reading, Miss Della Ione Billig. Music, orchestra. Adjournment.

Morning program, 9:00 o'clock.

Invocation, Rev. F. W. Landwer, pastor Memorial Evangelical church, Forreston, after which followed the election of officers. The treasurer's report was read and approved. Next followed an address on "Products and Prices," by Miss M. Lena Marrow, of Freeport, Illinois. Paper, "The Farmer of 1898," prepared by Alvin Countryman, of Rochelle, and read by Charles Walkup, of Oregon. "Corn Culture," E. S. Fursman, El Paso, Illinois, which was very interesting, and a lively discussion followed. Adjournment.

Afternoon session, 1:00 o'clock.

"Fireside Philosophy," Mrs. E. L. Gleason, Mendota, Illinois. "Poultry," E. D. Leland, Lanark, Illinois. "The Farm Dairy," W. R. Hostetter, Mt. Carroll, Illinois. "The Outlook for the Horse Market," F. J. Berry, Chicago, Illinois. "Small Fruit," E. S. Fursman, El Paso, Illinois.

The privilege was given for discussion after every subject and was participated in quite freely. This was by far the best Institute yet held in Ogle county. There was more interest manifested, and was more than double the attendance. The next Institute will be held at Forreston, February 2-3, 1899, under the management of the newly elected officers, viz.: President, Jacob F. Swank, Forreston; vice-president, Henry Billig; secretary and treasurer, John Small; Executive Committee, Jacob F. Swank, Forreston; Charles Walkup, Oregon; C. T. King, Kings; James Graham, Stillman Valley; A. F. Moore, Polo; Dwight Herick, Rochelle.

PEORIA COUNTY FARMERS' INSTITUTE.

The Peoria County Farmers' Institute was organized at Chillicothe in July, 1898. The following officers were elected: President, A. H. Bristol, Chillicothe; vice president, John G. Spicer, Edelstein; treasurer, F. S. Wilmot; secretary, E. A. Mitchell, both of Chillicothe. Executive committee, John Holmes, Alta; Arthur H. Yates, Dunlap; M. P. Reed, Brimfield; Loren Gallup Edelstein; Aman Scheeler, Chillicothe.

PERRY COUNTY FARMERS' INNSTITUTE.

The last annual meeting of the Perry County Farmers' Institute was held at the court house, in Pinckneyville, January 27 and 28, 1898.

The officers in charge were as follows: President, W. E. Braden, Cutler; vice president, F. L. Williams, Tamaroa; secretary, W. T. White, Cutler; treasurer, F. P. Anderson, Pinckneyville.

The program as given below was rendered:

Thursday, January 27, 9:30 a. m.

Vocal music. Invocation, Rev. C. M. Ritchie, of Cutler. Address of welcome by the mayor. Response, by Rev. C. M. Ritchie. President's address. Appointment of committees. "Horticulture, and Fruits on the Farm," W. W. Thomas, Makanda. Discussion of same and questions answered. "Raising an Orchard," A. A. Hinckley, DuBois. Discussion. "Spraying the Orchard," F. L. Williams, Tamaroa. Discussion. Question box opened. Adjourned.

Afternoon session, 1:15.

Music by Pinckneyville Quartet. "Insects That Injure Indian Corn," Prof. Forbes, of Urbana. This lecture will be fully illustrated by paintings. Discussion of same. "Corn and Stock," T. J. Rice, of Tamaroa. Discussion and questions. "Corn Culture," J. W. Whitlock, Tamaroa. Discussion. "The Advantage and Disadvantage of the Public Sale System," S. S. Taylor, Sparta. Discussion. Question box opened. Adjourned.

Night session, 7:30.

Music by Pinckneyville Quartet. "How I Raise Wheat," J. B. Pier, Cutler. Discussion. "Poultry and the Farm," J. P. Smith, of Freeburg. Discussion. "Strawberries," Mr. Paige, Tamaroa. Discussion. Question box opened. Music by quartet. Adjourned.

Friday, January 28, 9:30 a. m.

Music. Prayer, by Rev. J. T. Brown. "How I Raise and Care for Clover," John McLaughlin, of Southwest. Questions and discussion of same. "How I Raise and Care for Hay," W. G. Heape, of Tamaroa. Discussion. Stock Peas and Soja Beans." Dr. Morris, of Olney. Discussion. "Roads, How Improved," J. M. Pyatt, of Pyatts. "A Rural Education," W. R. Kimsey, of Tamaroa. "Why a Farmer Boy Should Have an Education." Mrs. L. N. Beal, of Mt. Vernon. Election of officers for the coming year.

Afternoon session, 1:15.

"Scoring of Hogs in the Court House Yard," by W. H. Ker, of Prairie du Rocher. "Horticulture and Marketing Fruit," L. N. Beal, Mt. Vernon. "A Talk on Hogs," A. J. Lovejoy, of Roscoe. "Dairying and Care of Milk," W. J. Fraser, Instructor in Dairying of Champaign University, and Zeb. Hempleman, of Tamaroa. Question box. Adjourned.

The officers for the ensuing year are: President, W. Braden, Cutler; secretary, W. T. White, Cutler; treasurer, F. P. Anderson, Pinckneyville.

PIATT COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Piatt County Farmers' Institute was held at Monticello, Ill., Thursday and Friday, January 20 and 21, 1898. Officers President, W. F. McMillen, Deland; Vice President, C. J. Bear, Monticello; Secretary, Thomas Lamb, Jr., Bement; Treasurer, Jas. P. Ownby, Monticello.

The programme of the Institute meeting held Jan. 20 and 21, 1898, is as follows:

Thursday Morning—10:00.

Opening address, by President McMillen, Deland. Music. Prayer, Rev. Calhoun, Monticello. Minutes of last Institute, 1896, Secretary. Welcome address, John Bender, Mayor. Response, W. C. Hubbard, Monticello. Music. Farm Drainage, C. B. Moore, Atwood. Rotation of Crops, Walter Hurd, Cerro Gordo. Progress in Veterinary Science in Treating Hog Cholera, Dr. Frank Bales, Monticello.

Thursday Afternoon—1:15.

Music. Live Stock as Sources of Profit: 1. Cattle, C. W. Piatt, C. J. Bear, Monticello; 2. Swine, A. T. England, A. J. Williams, Monticello; 3. Sheep, Rob Dobson, Cerro Gordo, Charles Lodge, Monticello. Horses,

W. F. McMILLEN, President.

J. F. Berry, Chicago. Management of and Profit in Poultry, L. S. Carter, Hammond. Contagious Diseases of Domestic Animals and Sanitary Legislation with Reference Thereto, C. P. Johnson, Secretary State Board Live Stock Commissioners. Small Fruits on the Farm, J. W. C. Gray, Atwood. Horticulture, Senator H. M. Dunlap, Savoy, Ill.

Thursday Night—7:30.

Music. The Remedy for Hard Times, W. E. Lodge, Monticello, H. D. Peters, Monticello.

Friday Morning—10:00.

Music. Beet Sugar Industry in Illinois, Prof. P. G. Holden, of U. of I. Questions and answers. Farm Management, Philip Dobson, Cerro Gordo; B. F. Kagey, Hammond. Benefits of Farmers' Institutes, F. V. Dilatush, Monticello. How to Improve Our Farmers' Institutes in Educational Value, Wiley M. Dewees, Deland. The Farmers' Home, Miss Lucy Thornton, Deland.

Friday Afternoon—1:30.

Music. The Piatt County Fair; Its Past, Present and Future, M. R. Davidson, Monticello; The Relation of the Farmers' Institute to the Agricultural Society, F. A. Odenheimer, Monticello. Music. Rural Free Mail Delivery, John M. Stahl, Quincy.

The meeting was one of the most successful ever held in the county. The next step in bringing the benefits of our Institute meetings to the farmers of the county remote from the county seat is the organization of township institutes. Such meetings, by creating local interest in Institute matters, will at the same time increase the attendance.

The officers elected for the ensuing year are: President, W. F. McMillen, Deland; Vice President, C. J. Bear, Monticello; Secretary, Thomas Lamb, Jr., Bement; Treasurer, Jas. P. Ownby, Monticello.

The next meeting will be held at Monticello January 17-18, 1899.

PIKE COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Pike County Farmers' Institute was held at Griggsville February 3 and 4, 1898, in connection with the 16th Congressional Farmers' Institute, the President, Hon. A. P. Grout, of Winchester, presiding.

The meeting opened with prayer by Rev. J. T. Orr. A paper was read by Mr. E. Whittleton, Barry, on "The Use and Abuse of Farm Implements." Adjourned until 1:30.

Afternoon session, February 3.

Paper, "Crop Rotation," W. H. Rowe, Jacksonville. Discussed by W. H. Laird, Maysville, and others.

Adjourned.

Evening session.

Song, Glee Club.

Paper, "Cattle," A. P. Grout, Winchester.

Song, Glee Club.

Paper, "The Kitchen in Rural Homes," Miss Helen Rheil, Alton.

Song, Glee Club.

Morning session, February 4.

Meeting was opened by prayer, Rev. Rhodes.

Paper, "The Preservation of Soil Fertility."

Address, "Fruit on the Farm," Hon. H. M. Dunlap.

Adjourned to 1:30.

Afternoon session.

Address, "Raising Hogs for Profit," F. H. Rankin, Athens. Discussed by J. W. Dorsey, Perry.

Paper, "Breeding and Management of Horses," John Landrigan, Albion.

Adjourned.

Evening session, 7:30.

Music, Glee Club.

Paper, "Better Foods and Better Methods," Mrs. H. M. Dunlap.

POPE COUNTY FARMERS' INSTITUTE.

The Pope County Farmers' Institute was organized June 22, 1898, at Golconda. The officers elected for the ensuing year are: President, John Hodge; Vice President, T. R. Kerr; Secretary, Geo. B. Baker; Treasurer, B. M. Lewis; all of Golconda; Executive Committee, J. N. Maynor, Eddyville; Thos. Austin, Rock; C. J. Cletcher, Brownfield; Geo. Gabaner, Rising Sun; J. F. Homberg, Rosebud.

PULASKI COUNTY FARMERS' INSTITUTE.

The Pulaski County Farmers' Institute was organized June 21, 1898, at Mound City. The following officers were elected: President, J. H. Conant, Villa Ridge; Vice President, W. A. Lackey, Pulaski; Secretary, A. G. Lentz, Ullin; Treasurer, Jno. A. Waugh, Mound City; Executive Committee, W. A. Ghant, New Grand Chain; J. S. Morris, Ullin; W. R. Crain, Villa Ridge; H. Weisenberg, America; S. A. Colwell, Villa Ridge.

PUTNAM COUNTY FARMERS' INSTITUTE.

The Putnam County Farmers' Institute was organized in 1898. The last meeting was held at Granville, January 13 and 14, 1898, under the following management:

President, J. A. Harper, Granville, Illinois; secretary and treasurer, W. B. Mills, Mt. Palatine; executive committee, L. H. Durley, Hennepin; A. J. Robinson, Granville; J. M. McNabb, Mt. Palatine; Howard Williams, Putnam

The following program was rendered:

THURSDAY, 13TH

Institute opened with prayer by Stephen Harrison. Music, by local talent. Address of welcome, Mrs. A. J. Robinson. Responded to by Mrs. L. H. Durley, of Hennepin. Both addresses being in poetry served to create a lively interest from the start. Paper, "Should Every Farmer be a Bookkeeper," T. E. Smith of Mt. Palatine. Address, "Poultry for Profit," Miller Purvis of Chicago.

EVENING SESSION.

Address, "Fruit on the Farm," by Mr. Purvis. Address, "Clover," H. B. Gurley, De Kalb.

J. A. HARPER, President.

FRIDAY, JAN. 14, 10 A. M.

Invocation by Luther Gurm. Music. Paper, "Farm Fences," James Barwood, of Granville. Discussion, H. K. Smith, Clear Creek; Orin Winship, Putnam, and others. Address, "The Dairy," H. B. Gurley.

1:30 P. M.

Music. Election of officers. "Is Education as Essential to the Farmer as to the Professional Man," discussed by H. B. Gurley, Judge McNabb, Mrs. Mary Harrison, W. B. Mills and others. Discussion of the topic, "Education as a Means of Support, Independence and Pleasure." Premiums were given on corn, butter and other farm products.

The officers elected for the ensuing year are: President, J. A. Harper, Granville; secretary and treasurer, W. B. Mills, Clear Creek, Ill.

RANDOLPH COUNTY FARMERS' INSTITUTE.

The third annual meeting of above Institute was held in Sparta, Ill., Tuesday and Wednesday, January 25 and 26, 1898, managed as follows: President, G. W. Wilson, Sparta; Vice President, M. A. Dennis, Sparta; Secretary, S. S. Taylor, Sparta; Executive Committee, J. M. Clark, Sparta; S. W. McKelvey, Sparta; J. A. Caldwell, Tilden.

The programme of this meeting was as follows:

Tuesday morning, 10 o'clock.

Prayer, Rev. H. H. Young, address of welcome by Mayor Wm. Stevenson; response by President Wilson; paper, "Feeding the Farm," by S. A. Blair, Sparta; after discussion of paper committee on nominations was appointed.

Afternoon session, 1 o'clock.

Prayer, Rev. W. T. Wylie; song by Prof. Burgett's Quartet, "Old Friends"; recalled and sang "Old Folks at Home"; a paper prepared by W. T. White, Cutler, "Outlook for the Farm," was read by the secretary; address by W. N. Wilson, Baldwin, "How to Make Our Farms More Profitable," proved intensely interesting.

G. W. WILSON, President.

Evening session, 7 o'clock.

Prayer by Rev. T. B. Stevenson; song, Burgett's Quartet, "Soldiers' Chorus"; an excellent paper on "Our Conditions and Needs" was read by H. Elmer McKelvey, Sparta; song, Quartet, "The Dish Ran Away With the Spoon"; address, "The Common School," Rev. J. R. McIlroy, Sparta.

Wednesday, January 26, 10 a. m.

Prayer, Rev. J. R. McIlroy; song, Burgett's Quartet, "When Your Note Falls Due"; papers, "Fruits for the Farm," L. N. Beal, Mt. Vernon; "Variations of Milk," by W. J. Frazier, Instructor in Dairying, State University, was a very instructive topic, as farmers in this section are deeply interested in milk production.

Afternoon session, 1 o'clock.

Prayer, Rev. C. N. Cate, song, Burgett's Quartet (by request), "Old Folks at Home"; encore, "Cobbler and Crow"; paper, "Apple Culture," by Joseph Husband, Leanderville, was read by J. Clark, Sparta; Mr. Husband sent a fine display of apples and illustrated his paper by showing sample when name was read and description given; his seven favorite winter apples are, for this section, Ben Davis, Winesap, Mammoth Blk Twig, Arkansas Blk., Huntsman Favorite, Jonathan, Mo. Pippin; address, "Insect Injury to Indian Corn," by Prof. Forbes, illustrated by colored plates; this made we farmers open our eyes when the Professor told us there were 217 varieties of insects that preyed on corn; he called for questions and they came thick and fast; paper, "Why a Farmer's Boy Should Get an Education," Mrs. L. N. Beal, Mt. Vernon; paper (burlesque), "How I Farm," L. N. Beal, Mt. Vernon. The committee on nominations reported the following names, which were duly chosen as officers for the ensuing year: President, S. S. Taylor, Sparta; Vice President, Robert Grant, Chester, and one from each township; Secretary, J. M. Clark, Sparta; Assistant Secretary, N. R. Lesslie, Houston, Treasurer, J. W. Caldwell, Sparta; Executive Committee, G. W. Wilson, Sparta; M. A. Dennis, Sparta; W. N. Wilson, Baldwin. The next meeting of the Randolph County Farmers' Institute will be held at Sparta February 8-10, 1899.

RICHLAND COUNTY FARMERS' INSTITUTE.

The Richland County Farmers' Institute was organized Feb. 5, 1898. The first annual meeting was held at Olney March 17-18, 1898, under the management of W. E. Poland, Olney, President, and Frank Britton, Calhoun, Secretary.

The programme of the meeting was as follows:

March 17, 1898—10:30 a. m.

Opening remarks, by Chairman W. E. Poland. Prayer, by Rev. A. W. Mace. Address of welcome, Mayor Senseman. Response, by Chairman W. E. Poland. Farm Paper, Mrs. Parker Jackson.

Afternoon—1:30.

The Hog, Breeding, Feeding, etc., by C. J. Sheraden. Discussion, by Ed Phillips. The Hen—How the Women Folks can Add to the Farm Resources, Glenn Wilson. Humus—No Plant can Grow without It; What It is, etc., Wm. Dyke, Effingham, Ill. Discussion, by Dr. Morris, S. M. Thompson, C. S. Mace and Ed Phillips. Can We Grow Potatoes in Richland County, by James Colvin. Discussion, by R. M. Cazel. Adjournment.

Evening session—7:30.

Music, by Olney Orchestra. Address, by Hon. E. S. Wilson. Recitation. Adjournment.

March 18, 1898—Morning session, 10:00.

Prayer, by Rev. Gustafson. Have We Neglected the Horse? Thos. Tippet. Discussion, by R. C. Morris, S. M. Thompson. Sheep Raising, Ed. Black, Lawrenceville, Ill. Discussion, R. C. Morris, Wm. Dyke, Thos. Tippet, G. H. Wheeler and W. E. Poland. Grasses and Forage Plants, C. S. Mace. Discussion by Wm. Dyke, R. C. Morris, S. M. Thompson, Ed Phillips and G. H. Wheeler.

Afternoon session—1:30.

Song, by Leaf School. Handling and Marketing Fruits, Lee Wilson. Discussion, by R. C. Morris, Wm. Dyke and Daniel Berry. Ought not the Cattle Industry Receive More Attention in Richland County? S. C. Wilson. Discussion, by S. M. Thompson, R. C. Morris. Music, by Leaf School. Recitation, by Miss Nettie Poland. Recitation, by Master Earl Daley. Insects and Parasites—What are Useful and what are Hurtful to the Orchard, Garden and Farm, Dr. Berry, Carmi, Ill. Music, by Leaf School. Committee on resolutions' report. Report of officers and election of officers for 1898. Adjournment.

The election of officers resulted as follows: President, W. E. Poland, Olney; Secretary, Frank Britton, Calhoun; Treasurer, R. R. Byers, Olney.

ROCK ISLAND COUNTY FARMERS' INSTITUTE.

The last meeting of the Rock Island County Farmers' Institute was held at Milan January 11-12, 1898, under the following management: President, Thos. Campbell, S. Rock Island; Secretary, B. F. Fountaine, Andalusia; Treasurer, John H. Vanderslice, Milan. Executive Committee, W. S. McCulloch, Taylor Ridge; Eli Corbin, Carbon Cliff; S. W. Heath, Milan; F. Osborn, Osborn; A. F. Hollister, Port Byron.

The programme of the meeting held at Port Byron Dec. 2, 1897, is as follows:

Devotional exercises, Rev. W. B. Ladd. Address of welcome, J. G. Osborn. Response, S. W. Heath. Strawberry Culture, Geo. Hunt. Discussion. Adjournment to 1:30 p. m.

Music. Taxation, Fred Titterington. Discussion. Farm Economy, B. F. Fountaine. Discussion. Our State Institute, Delegate S. W. Heath. Discussion. Music and adjourn to 7 p. m.

Music. Preparation of the Soil for Corn Culture, W. S. McCulloch. Discussion. Farm House Economy, Miss Stella Ashdown. Discussion. Music, America, by the audience.

The officers elected for the ensuing year are; President, F. H. Caldwell, Milan; Secretary, B. F. Fountaine, Andalusia; Treasurer, L. O. Johns, Moline.

The next meeting will be held at Milan Feb. 8, 9 and 10, 1899.

SALINE COUNTY FARMERS' INSTITUTE.

March 25, 1898, the Saline County Farmers' Institute was organized at Eldorado. The officers elected were as follows: President, John J. Jones; Vice President, A. H. Boren; Secretary, R. A. Hall; Treasurer, W. E. Mitchell, all of Eldorado. The first Institute will be held early next winter.

SANGAMON COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Sangamon County Farmers' Institute was held at Pleasant Plains, Ill., Tuesday, Wednesday and Thursday, October 26, 27 and 28, 1897, under the following management: President, E. D. Boynton, Pleasant Plains; Vice President, J. F. Prather, Williamsville; Secretary, James A. Stone, Bradfordton; Treasurer, L. H. Coleman, Springfield; Executive Committee, Charles F. Mills, A. L. Converse, John Upton, P. P. Kimble, all of Springfield; B. F. Workman, Auburn; G. W. Dunseth, Waverly. The members of the following standing committees contributed greatly to the success of the meeting, which was one of the best ever held in the county, viz.: Program, Advertising, Finance, Music and Entertainment.

The program of the Institute meeting held October 26, 27 and 28, 1897, is as follows.

Tuesday, October 26, 1897—Morning Session, 10 o'clock a. m. Music, Prayer, Rev. Agnew; Address of Welcome, Dr. A. Atherton; Response, Col. Charles F. Mills; President's Address, E. D. Boynton; Reading Minutes by the Secretary, James A. Stone; Report of Treasurer, L. H. Coleman; Music; Paper, "What Constitutes a Good Farmer?" James H. Maxcy, Pasfield; Paper, "Conveniences in the Farmer's Kitchen," Mrs. William R. Morris. Afternoon Session, 1:30 p. m.—Music; Prayer, Rev. Agnew; Paper, "Poultry on the Farm," Miss Hattie Ballard, Bradfordton; Paper, "Butter Making," Miss Belle Stitt, Pleasant Plains; Paper, "The Farmer's Garden," J. W. Cogsdell, Springfield. Evening Session, 7:30 p. m.—Music; Prayer, Rev. D. S. Dorner; Paper, "How to Check the Tendency of the Country Boy to Seek the City," H. Childs, Farmingdale; Recitation, Miss Jennie Watts, Farmingdale; Music; Paper, "How Can the Study of Nature Be Made Profitable in a Country School?" D. S. Darner, Pleasant Plains; Paper, "The Farmer's Boy," Henry Anderson, John S. Vredenburg, S.

Wednesday, October 27, 1897—Morning Session, 10 o'clock a. m.—Music; Prayer, Rev. Agnew; Paper, "Marketing Farm Products," William Stitt, Pleasant Plains; Paper, "The Farm," John S. Vredenburg, S. Afternoon Session, 1:30 p. m.—Music; Prayer, Rev. Agnew; Paper, "How to Make Count Growing, Curing, Feed," William Stitt, Pleasant Plains; Paper, "The Farm," John S. Vredenburg, S. Evening Session, 7:30 p. m.—Music; Prayer, Rev. Agnew; Paper, "How to Make Count Growing, Curing, Feed," William Stitt, Pleasant Plains; Paper, "The Farm," John S. Vredenburg, S. Adjournment.

Thursday, October 28, 1897—Morning Session, 9 a. m.—Music; Prayer, Rev. W. P. Clark; Paper, "Bee Husbandry," Charles Becker, Pleasant Plains; Paper, "Caponas," Martin Knudson, Bradfordton; Paper, "Cattle Breeding," James H. Pickrell, Springfield; Paper, "Horse Breeding," Thomas Wilson, Pleasant Plains; Paper, "Swine Breeding," M. M. Campbell, Pleasant Plains; Paper, "Sheep Breeding," James A. Stone, Bradfordton; Paper, "How to Sell Live Stock," Col. Charles F. Mills, Springfield. Afternoon Session, 1:30 p. m.—Music; Prayer, Rev. W. P. Clark; Address, Hon. Oliver Wilson Magnolia, Superintendent Illinois Farmers' Institute; Address, Prof. Eugene Davenport, Champaign, Dean Agricultural College, University of Illinois; other speakers to be furnished by the Illinois Farmers will occupy the afternoon.

The next meeting of the Sangamon County Farmers' Institute will be held at Williamsville October 11, 12, 13, 1898, under the auspices of President, Ira Knight, Williamsville; Vice President, Fullinwider, Mechanicsburg; Secretary, James A. Stone, Bradfordton; Treasurer, L. H. Coleman, Springfield; Executive Committee, Charles F. Mills, John Upton and A. L. Converse, all of Springfield; B. F. Workman, Auburn, and E. D. Boynton, Pleasant Plains.

E. D. BOYNTON, President.

SCHUYLER COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Schuyler County Farmers' Institute was held at Rushville, Thursday and Friday, December 9 and 10, 1897, under the following management. President, Jas. A. Teel, Rushville; county vice president, L. F. King, Huntville; secretary, H. H. Brown, Rushville, treasurer, Wm. J. Thompson, Rushville. A splendid program was prepared by the president and vice presidents, and was the most successful yet rendered.

The program of the meeting is as follows:

Thursday, December 9, 1897, morning session, 10:00.

Music, Union Chapel Quartet. Question box. "Schuyler County Fair," John H. Boice and others. Recitation, Miss Annis Bixler. Music, Union Chapel Quartet.

Afternoon session, 1:30.

Music, Union Chapel Quartet. "Cattle," paper by J. H. Pickrell, Springfield. Mr. Pickrell being absent the topic was ably discussed by others. "All around the Farm," H. G. Corril. "How Shall We Raise More Fruit, and Which the Best Varieties," Wm. Rawlins and Joseph Smith. Music, Union Chapel Quartet. "Signal Service," Rev. L. C. Liffell. "Good Roads," Chas. H. Bell. "Tornado In-

JAS. A. TEEL, President.

urance Among Farmers," J. W. Whitson. Adjournment.

Friday, December 10, 1897, morning session, 10:00.

Music, Union Chapel Quartet. "The Farmer as a Citizen," Hon. G. W. Dean. "Farmers' Wives and Farmers' Homes," Mrs. J. S. Howell. Recitation, Miss Kate Ritchey. Instrumental music, Charles R. Settles. Communications from State University. "The Farmers' Telephone," C. L. Dewitt.

Afternoon session, 1:30.

Election of officers. Music, Union Chapel Quartet. "The Farmer Boy in the General Field," Elder D. E. Hughes. Recitation, Geo. Ritchey. Instrumental music, Chas. R. Settles. "The Utilization of Our Corn Fodder," L. L. King. Music, Union Chapel Quartet. "Future of Schuyler County," H. V. Teel. Benediction, Rev. Hughes. Adjournment.

Our method of making up programs is as follows: The president calls a meeting of all the officers of the Institute, including the township vice presidents, and in this way all the townships in the county are represented. The several officers select a list of persons from different parts of the county who will be likely to attend and who will be interested enough to perform their part of the program and assign a suitable subject to each person. We advertise our meetings by publishing notices in newspapers and by distributing programs. We raise the money for expenses by publishing advertisements for local merchants in the margins of our programs.

The next Institute will be held at Rushville, November 17-18, 1898, under the following management: President, Jas. A. Teel, vice president, Chas. M. Doyle; secretary, Geo. H. Mason; treasurer, M. W. Greer, all of Rushville.

SCOTT COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Scott County Farmers' Institute was held at the opera house, Bluffs, January 12-13, 1898, with the following officers in charge: President, S. Allen; Secretary, H. D. Killpatrick; Treasurer, John Ritter.

The program of the late meeting was as follows:

Wednesday, 1:30 p. m.

Music—Buchanan's Orchestra. Prayer—Rev. J. M. Mayall. Address of welcome—President S. Allen. "Hints to Farmers"—H. Miner, Winchester, Ill. "Political Economy and Economy on the Farm"—L. F. King, Huntsville, Ill. "Diversified Farming"—D. W. Haskell, Exeter, Ill. Discussion.

Evening session.

Music—Orchestra. "Horticulture and Fruit on the Farm"—Senator H. M. Dunlap, Savoy, Ill. Solo—Miss Conover Linkins, Bluffs, Ill. Discussion—Lewis Calaway, Chapin, Ill. "Agriculture as I saw It in Foreign Lands"—Col. W. H. Fulkerson, Jerseyville, Ill.

Thursday, 9:30 a. m.

Music—Orchestra. Prayer—Rev. A. W. Mills. Solo—Miss Edith Arundel. "Corn Culture"—A. C. Rice, Morgan county, Ill. General discussion—Sim. Funk, Chas. Merriss, N. R. Smithson, Eli McLaughlin. "Cattle Breeding and Feeding"—A. P. Grout. Discussion—John Chambers, M. B. Edmondson, Jas. Wilson.

Afternoon session, 1:30.

Music—Orchestra. Appointment of committees. "Wheat and Cheat"—C. Vanderhaden, White Hall, Ill. Discussion—M. B. Moore, H. Dresser. "Improved Highways"—Geo. W. Dean, Adams, Ill. Query Box. Election of officers and miscellaneous business.

The officers elected for the ensuing year were: President, Henry Miner; Secretary, N. R. Smithson; Treasurer, John Taylor, all of Winchester. Executive Committee, Sam Peak, John Longnecker and Erwin Coultas, all of Winchester; Geo. Hogan, of Merritt, and M. G. Leib, of Exeter.

The next meeting will be held at Winchester.

SHELBY COUNTY FARMERS' INSTITUTE.

The Shelby County Farmers' Institute was organized June 17, 1898. The following officers were elected for the ensuing year: President, D. F. Richardson; Vice-President, John Yenser; Secretary, J. F. Christman; Treasurer, Wm. Middleworth, all of Shelbyville. Executive Committee, Max Kleeman, B. P. Cox, J. A. Crowder, John W. Killam, Mrs. Col. Scarborough and Mrs. J. B. Isenberg, all of Shelbyville, and John Swengel, of Neoga.

STARK COUNTY FARMERS' INSTITUTE.

The third annual meeting of the Stark County Farmers' Institute was held at Wyoming January 4 and 5, 1898. The officers in charge were: President, H. H. Oliver, secretary and treasurer, E. B. Lyons; executive committee, Thomas J. Dryden, West Jersey; Irwin Nowlan, Toulon; George T. Oliver, Elmira; John Eastman, Toulon; John H. Ogle, Toulon; John A. Colgan, Wyoming; Wilbur P. Snare, Castleton; S. A. Foster, Bradford.

The meeting was called to order at 10 a. m. by the president. The program was as follows:

Prayer, Rev. W. Walters. Music by male quartette. Address of welcome, Hon. A. G. Hammond. Response, by President H. H. Oliver. Adjourned to 1:30.

Called to order by president. Committees appointed. Paper, "How to Make and Sell Butter," Miss Elmira Dernuth. Wesley Rist

H. H. OLIVER, President.

read a paper on "Introducing and Advertising Corn (as Food in Foreign Lands." Discussion. Adjourned.

EVENING SESSION

Address, "Staying on the Farm for True Happiness," E. S. Fursman. Treasurer's report. Election of officers. Adjourned

JANUARY 5, 10 A. M

Applications from several towns for the next meeting were read and discussed. Paper, "Cultivation of Fruit and Fruit Trees," by I. Ingles. Quartette. Paper, "Sheep and their Profits on the Farm as Compared with Cattle." Discussion.

The next meeting will be held January 26-27, 1899, under the following management: President, E. S. Buffum, LaFayette; secretary and treasurer, Wilber Snare, Casleton

ST. CLAIR COUNTY FARMERS' INSTITUTE.

The St. Clair County Farmers' Institute held its last annual meeting at Liederkrantz Hall, Belleville, Ill., January 19-20, 1899, under the management of: President W. H. Wilderman, Freeburg; Secretary Laura Patterson, Freeburg; Treasurer Wm. Schaumloeffel, both of Belleville.

The program rendered was as follows:

WEDNESDAY—1 O'CLOCK P. M.

Opening remarks by the President.

Music—Max Eckhardt.

"Influence of Seed on Crops"—F. Helms.

Discussion.

"Farmers' Orchards"—T. E. Goodrich

Discussion.

"Has Extravagance Been an Element in the Cause of Hard Times?"

General discussion, led by G. R. Tate.

Emory Holcomb, Peter Seibert.

Adjournment.

W. H. WILDERMAN, President.

WEDNESDAY—7.30 O'CLOCK P. M.

Music—Piano solo, Miss Margaret Helms.

Recitation—Miss Lizzie Dickson.

"Advantages Derived from a Rural Home"—Miss Cecil Stookey.

Music—Duet, Miss Rhein and Mr. Magin.

Recitation—Miss Mollie Kimberlin

"Soliloquy of the Almighty Dollar"—Miss Anna Clark

Lecture—"Do Our Schools Make Better Farmers?" E. E. VanCleve.

THURSDAY—10:00 O'CLOCK A. M.

Music

"General Farming"—A. A. K. Sawyer.

"Legislation and Farmers' Interests"—Walter Eymann.

Discussion.

"Poultry"—J. P. Smith.

THURSDAY—1:00 O'CLOCK P. M.

"How Far is Economy in Taxation Advisable?"

General discussion, led by Geo. Glenn, E. S. Helms, Geo. Daab.

"Good Prices"—G. C. Patterson.

Discussion.

Transaction of business brought before the Institute.

Election of officers resulted in the election of the old officers.

Adjourned.

STEPHENSON COUNTY FARMERS' INSTITUTE.

The fourth annual meeting of the Stephenson County Farmers' Institute was held at the Court House in Freeport Tuesday and Wednesday, February 1 and 2, 1896, under the management of J. S. Walker, Rock Grove, president; S. M. Mulnix, Damascus, secretary; F. B. Walker, Dakota, treasurer, and the executive committee composed of one vice president from each township as follows: J. W. Stocks, Eleroy; A. J. Rees, Eleroy; W. W. Stibbens, Freeport; Samuel Markel, Freeport; Geo. F. Swartz, Freeport; Henry Lichtenberger, Freeport; H. F. Aspinwall, Florence; W. L. Lawhorn, Lena; Uriah Rubendahl, Cedarville; Wm. Fisher, Rock Grove; W. W. Etzler, Winslow; L. Sheffey, Pearl City; H. F. Barr, Rock Run; D. F. Thompson, Kent; G. W. Shippey, McConnell; W. S. Fehr, Dakota; Daniel Musser, Orangeville; J. H. Kersch, Keltner; W. T. Lamb, Ridott.

The program for this meeting was as follows.

Tuesday, February 1, 10:30 a. m.—Opening chorus; prayer, Rev. Dyringer; opening address by the President, J. S. Walker; appointment of committees; song by Bolton Quartette; paper, "County Fairs," James R. Cowley, Freeport; song.

1:30 p. m.—Song, Dakota Quartette; paper, "Hygiene," Miss M. Lena Morrow and Mrs. J. J. Nagle, both of Freeport; music by double quartette; recitation, H. C. Moyer, Afolkey; song, Dakota Quartette; recitation, "Prayer on Potatoes," Mrs. Geo. Shippey, McConnell; duet, paper, "The Public Schools in Relation to the Eye Sight of Children," Dr. I. G. Soulee, Freeport; recitation, "The Ride of Great

J. S. WALKER, President.

Grandmother Lee," Miss Anna Staybeck, Davis; song, Dakota Quartette; paper, "Value of Roots for Stock," S. S. Armstrong, Freeport; song by Institute; recitation, "Money Musk," Miss Anna Staybeck, Davis

7:30 p. m.—Song by quartette; paper, "Education for the Farmer," C. E. Griffith, Warren; duet, paper, "You and the World," Prof. H. C. Auman, Dakota; closing song

Wednesday, February 2, 10:15 a. m.—Opening chorus; music, Rock Grove Band; paper, "Home Finding," Rev. W. H. McClure, Forreston; violin solo, Miss Musser, Orangeville; paper, "Fruits on the Farm," A. F. Moore, Polo; song, Bolton Quartette; paper, "Our Relations," Frank Clingman, Winslow; paper, "Potato Culture," J. L. Slick, Lanark; solo, Prof. Burnwood, Winslow; declamation, Miss Minnie Sweeley, McConnell; music, Rock Grove Band.

1:30 p. m. Duet, Misses Warren and McCracken; Treasurer's report, F. B. Walker, Dakota; report of committee on resolutions; report of committee on nominations; election of officers; song, Winslow Quartette; paper, "Poultry Raising," Rev. Matthis, Kent; duet; declamation, E. O. Peck, Bolton; song, Bolton Quartette; paper, "Husband and Wife as Business Partners," Mrs. Geo. Shippey, McConnell; music, Rock Creek String Band; song, Prof. Burnwood, Winslow; short talk by State President, A. F. Moore, Polo; three delegates elected to attend the State Institute meeting held at Champaign; song, Winslow Quartette; music, Rock Grove String Band; adjournment

TAZEWELL COUNTY FARMERS' INSTITUTE.

The present organization was completed January 14, 1896. The first Institute was held in Armory Hall, Delavan, January 14-16, 1896; the second at the same place January 12-14, 1897. The officers for the ensuing year are: President, Ralph Allen, Secretary, J. O. Jones, Treasurer, James L. Reid, all of Delavan; Executive Committee, Val Graff, Minier; Chas. Scheneman, Green Valley; Geo. Scott, Boynton; Mrs. Norman Sunderland, Mrs. James Hall, both of Delavan. The next meeting will probably be held at Minier.

UNION COUNTY FARMERS' INSTITUTE.

The Union County Farmers' Institute was organized June 20, 1896. The officers elected were as follows: President, Daniel W. Karraker, Jonesboro; Vice President, James W. Fuller, Anna; Secretary, Geo. Barringer, Jonesboro; Treasurer, John B. Jackson, Jonesboro; Executive Committee, J. D. Wilson, Jonesboro; Eli Eddleman, Dongola; E. B. Wing, Cobden; Willis Canble, Alto Pass, L. Jasper Hess, Anna. The next meeting will be held at Jonesboro

VERMILION COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Vermillion County Farmers' Institute was held in Danville, Wednesday, Thursday and Friday, February 16, 17 and 18, 1898, under the following management: President, W. G. Herson, Allerton; vice president, George W. Hobson, Hope; secretary, Mrs. J. J. Southworth, Allerton; treasurer, Willy Fowler, Danville. Executive committee, E. R. McConell, Hoopeston; Wm. Bines, Ridge Farm, T. A. Taylor, Catlin; Richard Clipson, Catlin.

The following committees worked earnestly to make the meeting a success, the result being one of the best Institutes ever held in the county, viz.: Program, advertising, finance, music and entertainment committees.

The program of the Institute meeting held February 16 to 18 is as follows:

Wednesday evening, February 16th.

Song by Miss Sarah McCall. Mr. Hobson on "The Resources of Our County," followed by short talks on the same.

Thursday morning, February 17th.

Session opened at 10 a. m. with music.

Prayer by Dr. Reed, of First M. E. Church, Danville. President's address. Responded

W. G. Herson, President.

to by John L. Hamilton, Jr., of Hoopeston. E. E. Chester, of the University of Illinois, of Champaign, spoke on "The Care of Live Stock, Its Profit to the Farmer, Etc." Discussion. Paper by Mr. Fowler and presented by G. Hobson, in which he set forth the good of sheep raising as a source of revenue to the farmer. Mr. Cheny, of Sidell, spoke on the care of live stock in general on the farm. Mr. Hobson spoke in favor of the Short-Horn cattle. Mr. McConell thought the raising of hogs the greater source of revenue. Adjournment.

Afternoon session.

Opened by music, Misses Kiningham and Grant. President introduced A. C. Baldwin, of Deer Park, Ill., who made an excellent speech on solid roads in Illinois, how to obtain them, their convenience, benefit, etc. This called forth many questions as to expense and methods of construction. Dr. Reed presented the National Temperance movement in a stirring appeal to the young men from a personal standpoint. Vice President McConell presided the remainder of the session. E. E. Chester told how to raise 100 bushels of corn to an acre. At 4:30 Miss McCall and pupils sang "Two Flags," "America" and "Illinois."

Evening session.

Opened at 7:30 with piano duett by Misses Grant and Kiningham, of Danville. An address "On Roads," by A. C. Baldwin.

Friday, February 18th.

Meeting convened at 9:30. Opened by music. Paper, Mrs. E. C. McDowell, of Sidell township, "Farming, Its Benefits, Profits, Etc." Mrs. I. S. Raymond, of Sidney, read a paper on "The Grange, Its Benefits, Etc." which was highly appreciated. Mr. Janison, of Catlin, was called and made a few well chosen remarks in favor of the Grange. The convention then took up the subject of home life on the farm. Mrs. Southworth made a few substantial remarks on the subject and an earnest plea for the better education of the farmer boys and girls, etc. This called forth remarks from almost every member of the convention.

Afternoon session.

Opened at 1:30. Mrs. Julia Mills Dunn, of Moline, gave an able address on "Our Industrial Problem," which was discussed at some length. The committee on resolutions made report, which was accepted. Report of committee on nominations was called and officers elected as follows: President, G. W. Hobson, Hope; vice president, E. R. McConell, Hoopeston; secretary, Robert C. Smith, Danville; treasurer, Willy Fowler, Danville. Executive committee, W. G. Herson, Allerton; E. R. McConell, Hoopeston; Wm. Bines, Ridge Farm; T. A. Taylor, Catlin. Next meeting to be held at Catlin. Institute adjourned.

WABASH COUNTY FARMERS' INSTITUTE.

The Wabash County Farmers' Institute was held at the court house, Mt. Carmel, October 20 and 21, 1897, under the management of Thos. Stone, President, and J. E. Seiler, Secretary, both of Mt. Carmel.

The programme of the meeting was as follows:

WEDNESDAY. MORNING SESSION—9:30 O'CLOCK.

Opening prayer, Rev. J. H. Stotler, Mt. Carmel.

Appointment of committees.

Annual address of President, Thomas Stone, Mt. Carmel.

Address of welcome, Mayor Hyne, Mt. Carmel.

Response, Dr. Robert C. Morris, Olney.

Report of committee on organization.

Adjournment.

AFTERNOON SESSION—1:30 O'CLOCK.

Music.

Our Beef Interests, Robert Mitchell, Princeton, Ind.

Discussion.

Report of Entomologist and Botanist, J. Schneck, M. D., Mt. Carmel.

Discussion.

Music.

What Shall the Farmer Do to be Saved? Dr. Robert C. Morris, Olney.

THURSDAY. MORNING SESSION—9:30 O'CLOCK.

Music.

Invocation, Rev. J. H. Walterick, Mt. Carmel.

The Farm Dairy, W. T. Grundon, Mt. Carmel.

Discussion.

Sanitary Management of Swine, Hon. James Riley, Thorntown, Ind.

Discussion.

Mixed Farming, O. H. Wood, Friendsville.

Adjournment.

AFTERNOON SESSION—1:00 O'CLOCK.

Music.

Agricultural Engineering, Paul Chipman, Mt. Carmel.

Agricultural Education, Eugene Davenport, Dean of Agriculture, Urbana.

Synopsis of Some of the Work of the U. S. Department of Agriculture, 1896, Hon. Jacob Zimmerman, Mt. Carmel.

Drawbacks to Rural Life—How Overcome, Oliver Wilson, State Superintendent of Farm Institutes, Magnolia.

The next meeting will be held December 1-2, 1898, under the management of the following officers: President, Thos. Stone; Vice President, J. B. Stroh; Secretary, J. E. Seiler; Treasurer, E. B. Keneipp, all of Mt. Carmel. Executive Committee—C. C. Lingenfelter, Mt. Carmel; C. S. Andrus, Patton; Geo. Courter, Allendale; Hallock Shearer, Guard's Point; Alex Compton, Keensburg.

WARREN COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Warren County Farmers' Institute was held at Monmouth, Ills., Thursday and Friday February 17 and 18, 1898, under the following management: President, C. M. Rodgers, Eleanor; vice-president, H. L. Speakman, Monmouth; secretary, J. Ed. Miller, Monmouth; treasurer, O. S. Barnum, Monmouth; executive committee, J. R. Barnett, Coldbrook; D. C. Frantz, Monmouth; J. W. Coghill, Roseville; I. M. Capp, Larchland.

The officers and members of the executive committee contributed much to the success of the meeting and made it one of the best ever held in the county. Hon. G. W. Dean, Superintendent of Farmers' Institutes in this congressional district, very worthily assisted in creating an interest in the farmer's work.

The program of the Institute held February 17 and 18, 1898, is as follows:

THURSDAY, 10 A. M.

Prayer by Rev. Dr. T. H. Hanna. Address of welcome, Mayor T. L. Hall. Response, C. M. Rodgers, president. Music, by Bruner Bros. The subject "Culture of Corn" was then started by D. C. Frantz and ably continued by members present, taking up the time till the noon adjournment.

C. M. RODGERS, President.

AFTERNOON SESSION, 1:30 P. M.

Music by Bruner Bros. Paper, "Poultry for Profit," by John E. Porter, Little York, Ill. Paper, "Economical Milk Production," by H. L. Speakman, Monmouth. Paper, "Profitable Butter Making," by Geo. R. Wilson, Monmouth. Paper, "Clover Culture," by Clarence Young, Coldbrook. Paper, "Cattle Feeding," by John Sprout, Monmouth. Music, by Bruner Bros. Adjournment.

FRIDAY, 10 A. M.

Prayer, Rev. Father P. P. Owens. Address, "Farming in General," by Hon. G. W. Dean, Adams, Ill. Paper, "Practical Results to be Derived from Our Agricultural Department," by R. H. Riggle, Cameron, Ill. Music by the Rees Sisters and Bruner Bros. Paper, "Profit in Sheep Raising," by D. R. Acheson, Little York, Ill. Address, "Some Things About Bacteria," by S. S. Maxwell, Monmouth College. An election of officers was then held and the following persons were elected for the ensuing year: President, Eli Dixon, Roseville; vice-president, D. R. Acheson, Roseville; secretary, J. E. Miller, Monmouth; treasurer, O. S. Barnum, Monmouth; executive committee, J. R. Barnett, Coldbrook; J. Coghill, Roseville; D. C. Frantz, Monmouth; I. M. Capps, Roseville; delegates to State Institute, C. M. Rodgers, Eleanor; H. M. Lewis, Berwick; J. R. Barnett, Coldbrook. Music by the quartette.

AFTERNOON SESSION.

Music by quartette. Paper, "Fruit for Everybody," by W. T. Weir, Biggsville, Ill. Paper, "A Home," by Mrs. Robt. Holloway, Alexis. Address, "Our Educational Needs," by County Superintendent of Schools Mrs. Mary E. Sykes. Music by the Misses Rees and Bruner Bros. Paper, "The Farmer's Table," Miss Belle Tirooid, Monmouth. Poem, "The Old Settler's Soliloquy," read by Ed. Miller, Monmouth. Music by quartette. Adjourned.

The next meeting will be held at Monmouth November 22-23, 1898.

WASHINGTON COUNTY FARMERS' INSTITUTE.

Our first and last Institute was held February 9-10, 1898, at Nashville, Ill. The organization was completed January 18th by Director Kimzey of the Twenty-first District. Officers elected were:

President—J. D. Maxwell.

Vice-President—J. A. Chesney.

Treasurer—H. Hoffman.

Secretary—M. L. Merker.

The attendance was good and the entire session full of interest.

The meeting was opened with prayer by the Rev. Johnson.

Address of welcome—Judge Geo. Verner.

Response—Wm. Miller, Pilot Knob.

The following papers were read:

WEDNESDAY'S SESSION.

"How to Build Up and Maintain the Fertility of the Soil"—Joseph McCanaghie, Oakdale.

J. D. MAXWELL, President.

"Dairying and Care of Milk"—W. J.

Fraser, Instructor in Dairying at State University.

Address—"Rural Education"—Prof. R. Pence, Nashville.

"Feeding Dairy Cows"—C. L. White, Beaucamp.

"Ensilage as a Feed"—Capt. J. May, Nashville.

THURSDAY'S SESSION.

Prayer—Rev. C. E. Banard.

"Orchard Culture and Care of Apple Orchard"—Prof. J. C. Blair, Champaign.

"Wounds, and How to Treat Them"—Donald McIntosh, Professor of Veterinary Science, Champaign.

"Wheat Culture"—Win. Kugler, Okawville.

Burlesque—"How I Run My Farm."—L. N. Beal, Mt. Vernon.

"Horticulture and Fruits for the Farm"—L. N. Beal, Mt. Vernon.

"Poultry on the Farm"—J. L. Hann, Beaucamp.

"Bee Keeping"—R. G. Ardrey, Oakdale.

"Why a Farmer Boy Should Have an Education"—Mrs. L. N. Beal

"Stock Peas as a Fertilizer"—J. W. Stanton, Richview.

Business meeting

Officers elected for the ensuing year are:

President—J. L. Maxwell, Oakdale.

Secretary—Marion Merker, Nashville.

Treasurer—John Meyer, Addieville.

The next meeting will be held at Nashville.

WAYNE COUNTY FARMERS' INSTITUTE.

The Wayne County Farmers' Institute was organized November 30, 1898. The last meeting was held at Jeffersonville January 21-22, 1899, under the following management: President, E. A. Rankin, Fairfield, Vice President, Mrs. A. Davis; Secretary, J. R. Clark, Treasurer, A. McDannel; all of Jeffersonville; Executive Committee, O. B. Simpson, Mrs. Tim Whitesacre, Mrs. A. R. McDannel, R. B. Young and Geo. L. Bulkley. The programme of the last meeting was as follows:

Morning session.—Song and prayer; address of welcome by John Kaylor; response by D. Logan "Are Our Public Schools Under the Present System Calculated to Alienate the Farmer Boy From Country Life?" by J. L. Young, Fairfield; "Our Public Roads and What We Shall Do With Them," by N. Sidwell.

Afternoon session.—"How to Cultivate an Orchard for the First Twelve Years," George Karr, Johnsonville; "The Farmer's Garden," by S. G. Earl; "Feeding Steers for Profit," by J. C. Rothwell and Sam Kramer; "Benefits of Farmers' Institutes," by L. N. Beal, Mt. Vernon.

Evening session.—Song by choir; "Peach Culture," J. J. Davis; song by Millner's Quartet; recitation by Claude McDannel; "How to Keep the Girls on the Farm," by W. C. Davis; music by string band; recitation by Fred Davis; instrumental music, recitation; song, quartet.

Saturday, morning session.—Music and prayer; "The Relation of Science to Agriculture," by Prof. Bonnell, President of Hayward College, Fairfield. "How to Create More Interest Among Farmers in the Institute Work," by G. Bulkley. "The Feeding of Balanced Rations," by C. S. Mace; "The Most Profitable Breed of Sheep for Farmers," by E. M. Turner.

Afternoon session.—Song, "Growing and Feeding of Forage Crops," by Ed. Oatman; "Poultry Raising for Profit," by Mrs. Barringer.

The next Institute will be held at Jeffersonville November 24-25, 1899, under the auspices of the officers named above. We advertise in all the county papers, have hand bills struck and send to all of the post offices in the county and have one hundred programs sent through the mails to the farmers in the county.

E. A. RANKIN, President.

WHITE COUNTY FARMERS' INSTITUTE.

The last White County Farmers' Institute was held at Carmi Friday and Saturday, March 25 and 26, 1899, under the following management: President, J. M. Crebbs; Vice President, Geo. Ziegler; Secretary, Leonard Ward; all of Carmi, Treasurer, Geo. Kuykendall, Hawthorn Township; Executive Committee, Dr. Berry, Geo. Ziegler, Geo. Kuykendall, Leonard Ward and J. M. Crebbs. The programme of the Institute meeting held March 25 and 26, 1899, is as follows:

Friday, March 25, 1899.—Met at the court house in Carmi and were called to order by the President, J. M. Crebbs, at 1:30 p. m., and the meeting opened with prayer by Rev. R. S. Severson, pastor of the First Presbyterian Church at Carmi; address by E. E. Chester, of Champaign, on "Cattle Raising"; Mr. Chester's address was followed by a general discussion on the subject; address by C. P. Johnson, of Springfield, on "The Contagious Diseases of Hogs and Cattle"; general discussion, adjourned.

The night session opened at 8 p. m. by a recitation by J. M. Martin, Jr., of Carmi, subject, "Debate on the Suppression of the Press"; address by Dr. Daniel Berry, of Carmi, on one of the most important if not one of the most interesting subjects ever presented for our consideration, "The Ideal Home"; this address was followed by a paper by Mrs. R. C. Morris, of Olney, on "The Education of the Farmers' Boys"; address by R. C. Morris, setting forth the importance of Institute work and urging a better attendance.

The next White County Farmers' Institute will be held at Carmi, time not set, under the auspices of Ezekiel Munsinger, President; Wm. Whiting Vice President; Dr. Daniel Berry, Secretary and Treasurer, and Lowery Austin, F. E. Pomroy, Henry S. Land and Henry Moreland, Executive Committee.

WHITESIDE COUNTY FARMERS' INSTITUTE.

The Whiteside County Farmers' Institute was organized, with eight persons present, Sept. 21, 1895, and has since maintained an active and earnest working organization. Each year there has been held the regular two-day meeting, one in addition to this and various other one-day meetings. Generally speaking, an excellent interest is taken in these meetings all over the county. During the past year a one-day and evening meeting was held at Albany Oct. 19, 1897, and a similar meeting at Prophetstown Dec. 9th. Both meetings were well attended. Feb. 10 and 11 a union meeting was held at Morrison, consisting of the usual annual two days' meeting and the 10th Congressional Farmers' Institute. The delegates to the two district organizations worked harmoniously together and an enthusiastic and profitable Institute was the result.

The following is the programme as presented:

Thursday, February 10.

Opening, 10 a. m. Music. Prayer, Rev. J. R. Hamilton. Minutes of last meeting. What Crops will Probably Pay Best during 1898? Discussion opened by R. M. Thompson, of Fenton.

Afternoon session—1:30 p. m.

Address of welcome, Hon. Oscar Woods, Morrison. Response, J. H. Coolidge, Galesburg, Vice President State Farmers' Institute. Dairy Management: (b) Private Butter-Making, W. R. Hostetter, Secretary Carroll County Farmers' Institute, and Harmon E. Burr, Union Grove. Address, Corn Culture and Its Commercial Products, Hon. E. S. Fursman, El Paso. Appointment of committees. Roll call of township delegates of Whiteside county and brief reports from the same.

Evening session.

From 7 to 7:30, informal social. Music, Morrison Quartette. How to Secure the Best Results by Forcing Bulbs for Winter Blooming, C. A. Olds, Albany. Recitation, Miss Alberta A. Stowell, Morrison. The Rural School House: My idea of what such a structure ought to be, James Talbott and James R. Anderson, Jordan. Music, Morrison Quartette. Practical Home and Housekeeping, Mrs. John R. Thompson, Prophetstown. Address, Farm Homes, Hon. E. S. Fursman, El Paso. Music, Morrison Quartette. Recitation, Miss Mabel Worthington, Coloma. Music, Morrison Quartette.

Friday—9 a. m.

Music. Prayer, Rev. L. T. Bush. Election of officers. Transaction of business. Roll call of Congressional delegates, each responding to the following questions: (a) How has Farmers' Institute work, local, township and county, prospered in your county during the past year? (b) What lessons socially, agriculturally and from a business point of view may the farmer learn from 1897? Response to be led by Hon. J. H. Coolidge, of Galesburg, director for 10th Congressional District. The Care and the Management of the Work Horse, W. W. Noyes, Prophetstown. A Practical Lesson in Tree-Trimming and Tree-Setting, C. R. Powell, Sterling.

Friday afternoon—1:30 p. m.

Music. Address, How Can the Farmer Make the Most of the Future? Oliver Wilson, Magnolia, State Superintendent Farmers' Institutes. Music. Beef Cattle: (a) The class it pays best to raise; (b) how to care for and feed; (c) when and how to market, George E. Goodenough, Union Grove, and Warren Reynolds, Prophetstown. Final words by President and delegates. America—To be sung by all.

The delegates from the other counties did their full duty toward making the meeting a success, a fact which was much appreciated by the local committee. In the absence of President Charles W. Mitchell, in the south at the time of the meeting, his place was carefully and ably filled by Vice President C. A. Wetherbee.

The next meeting will be held Jan. 17-18, 1899, under the auspices of: President, C. A. Wetherbee, Sterling; Vice President, R. R. Murphy, Gardenplain; Secretary, W. J. Johnston; Treasurer, H. L. Ewing; the last two of Morrison.

WILL COUNTY FARMERS' INSTITUTE

The last annual meeting of the Will County Farmers' Institute was held in Joliet, Thursday, Friday and Saturday, February 10, 11 and 12, 1898, under the following management: President, A. Allen Francis, New Lenox; Secretary and Treasurer, Healy H. Alexander, Lockport; Executive Committee, James Patterson, Hoddam, J. H. Alexander, Lockport; John C. Baker, Manhattan; Wm. A. Goodspeed, Normal, A. S. Clow, Tokio; H. H. Stassen, Joliet; O. E. Higgins, DuPage P. O.; James Fletcher, Peotone; Abel Bliss, New Lenox. The program was as follows:

Thursday, February 10.

Prayer—Rev. Clark, New Lenox. Address of welcome—Mayor Langer, Joliet. Response to welcome on behalf of Institute—Mrs. A. Allen Francis, New Lenox. The Benefits of Farm Organization—W. D. McGrath, Manhattan. Song—Marley Quartette, Messrs. Savage Bros. and Haley Bros., Marley. The Relation of Tenant to Landlord—Jesse Thompson, East Wheatland. Instrumental solo—Miss Robyn, Chicago.

Afternoon session, 1:15 p. m.

Song—Marley Quartette. Sheep Husbandry—O. E. Higgins, DuPage. What I Know About Raising Hogs—John O'Connor, East Wheatland. Piano solo—Miss Robyn. Training of Children—Mrs. M. D. Morrison, Peotone. Music—DeLucca's Orchestra. Recitation—Miss Margaret L. Francis, New Lenox. The Horse—F. J. Berry, Chicago. Telephones for Country Homes—J. W. Gougar, New Lenox.

A. A. FRANCIS, President.

Friday morning, February 11—10:00 o'clock

Prayer—Rev. Strout, Joliet. Is the Illinois State Fair so Conducted that the Farmers Get the Benefit They Should From It?—John C. Baker, Manhattan. How to Secure a Stand of Clover—John W. Mangun, Lockport. Committee on Resolutions appointed by the chair—Capt. Savage, Marley; R. B. Graves, Plainfield; James Patterson, Hoddam; Allen Carpenter, Channahon; J. E. Barr, Manhattan. Song—Amphion Quartette, Mesdames Kinnehan and Castle, Misses Harbaugh and Webb, Joliet. Potatoes, Variety and Culture—George Pickel, Plainfield. Reading of first prize essay on the subject, What Makes Farming Unprofitable?—J. H. Alexander. Mutual Insurance—Abel Bliss, New Lenox. Music—DeLucca

Afternoon session

Recitation—Miss Ruby Jane Cocker, Manhattan. Our Little Children—Mrs. Mary C. Boardman, East Wheatland. Piano solo—Miss Barnes, Joliet. Recitation—Miss Leonora Smith, Lockport. Music. Song—Amphion Quartette. Land Centralization and Its Effects—George A. Barr, Joliet. Illustrations on Land Centralization—Leslie Stearns, Joliet. Corn, How to Produce It—W. H. Cryder, Plainfield. Song—Amphion Quartette.

Saturday, February 12.

Prayer—Rev. Laing, Joliet. Reading of second premium prize essay—Alexander Gordon, Manhattan. Character Building in Our Public Schools—J. P. Browne, Plainfield. Song—Amphion Quartette. Recitation—Miss Grace Clow, Tokio. The American Farmer—Chas. Francis, New Lenox. Music. The Relation of the Parent to the Public School—M. Madison, West Chicago. Household Economics—Mrs. Walter H. Rowley, Marley. Song—Amphion Quartette

Saturday afternoon.

Music—Marley Quartette. The Home and Mother—Mrs. J. W. Richards, Joliet. Recitation—Miss Dibble, Chicago. Election of officers and reports of committees heard. The following officers will conduct the next meeting: President—A. Allen Francis, Secretary and Treasurer—Healy H. Alexander. Executive Committee—James Patterson, J. H. Alexander, John C. Baker, Wm. A. Goodspeed, A. S. Clow, H. H. Stassen, O. E. Higgins, Jas. Fletcher, Walter H. Rowley

We had a rousing Institute, the average daily attendance being 1,200.

WILLIAMSON COUNTY FARMERS' INSTITUTE.

At a meeting held in the court house at Marion, June 23, 1898, the Williamson County Farmers' Institute was organized. The officers elected were as follows: President—A. Luke Ralla, Marion. Vice President—T. J. Chamness, Chamness. Secretary—T. J. Youngblood, Marion. Treasurer—C. A. Furlong, New Denison. Executive Committee—James Sellers, Pulley's Mill; Abe Russell, Cartersville; John C. Everett, Herrin; Luther A. Malone, Corinth; Rufus Neeley, Absher.

WINNEBAGO COUNTY FARMERS' INSTITUTE.

The last meeting of the Winnebago County Farmers' Institute was held on January 25th and 26th, at Central Music Hall, in the city of Rockford, under the following management: President, A. J. Lovejoy, Roscoe; vice president, W. L. Frisbie, Rockford; secretary, A. E. Cutler, Rockford; treasurer, Geo. W. Collins, Rockford. Executive committee, D. B. Redington, J. B. Hari, Lawrence McDonald, W. H. Miller, John Wilcox.

The evening session opened with prayer by the Rev. Bannen, followed by a few remarks by President A. J. Lovejoy, after which a very interesting talk on "Fertility of Soils," by C. H. Everett, of Beloit, Wis.—one of Wisconsin's practical Institute workers—was greatly enjoyed by the audience. This was followed by W. L. Frisbie, the vice president, on "What Has Been Accomplished in Hard Road Building." It being a subject of great interest, as Winnebago county has a very large mileage of good gravel and stone roads, it was appreciated in the highest degree.

A. J. LOVEJOY, President.

The afternoon session was taken up first by the appointment of committees. Select reading by Miss Countryman. Interesting talk on "Corn Culture" by E. S. Fursman. Talk on "Swine Husbandry," by C. H. Everett, of Beloit, with the ever interesting discussions, closed the first day's program.

Prof. Holden, of the University, gave us a very interesting talk on "Sugar Beet Culture in Illinois." Our attendance was good, and had it not been for the snow blockade on railroads and country roads, the hall would have been filled to overflowing.

One of the most important and interesting topics of discussion was a practical talk on the great dairy interests of this section by the celebrated dairyman and breeder of high-class Jerseys, Mr. H. C. Taylor, of Oxfordville, Wis., the man who has the proud distinction of breeding the champion butter cow at the World's Columbian Exposition, "Brown Bessie."

The same officers were elected for the year 1899, and are already planning for the best Institute in Northern Illinois.

The next meeting will be held at Rockford, January 26-27, 1899.

WOODFORD COUNTY FARMERS' INSTITUTE.

The last annual meeting of the Woodford County Farmers' Institute was held at Minonk, Ill., Thursday and Friday, Feb. 17 and 18, 1897, under the following management: President, P. H. Davison, Yankeetown; vice-president, W. H. Bullock, Eureka; secretary, W. H. Smith, Eureka; treasurer, Geo. Shuman, El Paso. Executive Committee, Josiah Kerriek, J. A. Simpson, T. P. Clark, Chas. Kennedy and E. M. Kenyon, all of Minonk.

The meeting was one of the best ever held in the county and some of our leading State Institute workers said it was one of the best they had ever attended.

The program of the Institute meeting is as follows:

THURSDAY, 10 A. M.

Prayer, Rev. Moon. Address of welcome, Mayor A. B. Klipp. Response, John McGuire, Metamore. Appointment of committees. Arrangement of exhibits.

AFTERNOON SESSION, 1:30 P. M.

Music, by Minonk Orchestra. Song, by quartet. "Butter Making on the Farm," Mrs. John Dodd, Cazenovia. Discussion, led by P. H. DAVISON, President. Mrs. Marshall, Roanoke. "Potato Culture," W. H. Smith, Eureka. Discussion, led by Bart Peterson, Minonk. "Small Fruit on the Farm," H. Augustine, Normal. "State Institute Work," Oliver Wilson, Magnolia. "Our Poultry Interests," W. F. Priebe, Minonk. "Oat Culture," J. M. Davison, Eureka. Discussion, led by Chas. Kennedy, Minonk. Select reading, Mrs. Minnie Lee Moon.

EVENING SESSION, 7:00

Music, by orchestra. Address, "Farm Life," B. F. Radford, Eureka. Song, Mr. Huggins, Seneca. Reading, Miss Lita Stoddard, Minonk. Music, by orchestra.

FRIDAY, 9:30 A. M.

Prayer, by Rev. Vivian. Music. Reading, Mrs. W. A. Kleinhen. "Poultry Raising," Mrs. Noble King, Normal. Discussion, led by Frank Jackson, Rutland. "Corn Culture and How to Raise 100 Bushels Corn Per Acre," E. S. Fursman, El Paso. Discussion, led by J. H. Beagly, Sibley. Song, Mr. Huggins, Seneca.

AFTERNOON SESSION, 1:30.

Music, by orchestra. "Past, Present and Future of Agriculture," Eugene Davenport, Champaign University. "Farm Homes," Mrs. H. K. Smith, Mt. Palestine. "Swine Breeding," Mr. Willmoth, Seneca. Discussion, led by Mike Rich, Minonk. "Horse Breeding," G. W. Cress, Washington. Discussion, led by Jas. Kerriek, Minonk. "Education of Farm Boys and Girls," Prof. R. A. Becker, Minonk.

Our method of advertising the meeting is to mail score cards and programs to farmers and advertising in the county newspapers. Our method of raising money for expenses is to solicit from the farmers and business men.

The next annual meeting of Woodford county will be held in Minonk, Ill., Jan. 19 and 20, 1899. The speakers from abroad will be Prof. Davenport, of Champaign; Mrs. Kidsez, of Peoria; Mr. Moore, of Chicago.

The following are the officers elected for the ensuing year: President, P. H. Davison, Yankeetown; vice-president, W. H. Bullock, Eureka; secretary, W. H. Smith, Eureka; treasurer, Geo. Shuman, El Paso.

DATES AND PLACES OF INSTITUTE MEETINGS.

The appointments of County Farmers' Institute meetings, so far as reported for the ensuing season, are given below, with the names of the officers in charge of the same:

Adams County—President, S. N. Black, Clayton; Secretary, J. E. Simmonds, Camp Point; Treasurer, Ed. S. Franks, Clayton. Time and place of next meeting, Camp Point, November 11-12, 1898.

Alexander County—President, Martin Brown, Sr., Thebes; Secretary, Jesse E. Miller; Treasurer, Judge F. Bross, both of Cairo. Time of next meeting, November 24-25, 1898; place, Cairo.

Bond County—President, I. H. Denny; Secretary, E. P. Gracey; Treasurer, F. Dressor, all of Sorento.

Boone County—President, A. S. Collins; Secretary, Gamett Sager; Treasurer, Frank Leach, all of Belvidere. Time and place of next meeting, Belvidere, January 25-26, 1899.

Brown County—President, J. B. Vandeventer; Secretary, Herbert A. Perry; Treasurer, Robert Bloomfield, all of Mt. Sterling. Time of next meeting, November 9-10, 1898; place, Mt. Sterling.

Bureau County—President, C. C. Pervier, Sheffield; Secretary, Harry Bryant; Treasurer, E. A. Washburn, last two of Princeton. Time and place of next meeting, Princeton, January 24-25, 1899.

Calhoun County—President, W. E. Barber, Hamburg; Secretary and Treasurer, C. H. Lamar, Hardin. Place of next meeting, Hardin.

Carroll County—President, J. V. Cotta, Nursery; Secretary, W. R. Hostetter, Mt. Carroll; Treasurer, C. Lamp, Lanark.

Cass County—President, Marcus Crum; Secretary, William B. Conover; Treasurer, James Williamson, all of Virginia. Place of next meeting is Virginia.

Champaign County—President, J. M. Love, Philo; Secretary, J. A. Hosack, Champaign; Treasurer, Z. R. Genung, Rantoul. Time and place of next meeting, January 18-19, 1899, Champaign.

Christian County—President, Richard Stone, Stonington; Secretary, John W. Hunter, Owaneco; Treasurer, George Large, Taylorville. Place of next meeting is Taylorville.

Clark County—President, H. P. Lowry, Martinsville; Secretary, J. W. Adams, McKeen; Treasurer, Joseph Lutz, Marshall. Place and time of next meeting, Marshall, January 19-20, 1899.

Clay County—President, Jos. Peak; Secretary, A. E. Shinn; Treasurer, A. H. Meyer, all of Flora. Place and time of next meeting, Flora, November 22-23, 1898.

Clinton County—President, J. T. Donnewald, Carlyle; Secretary, George Johnpeter, Posey; Treasurer, John J. Newkirk, Carlyle.

Coles County—President, C. R. Doty; Secretary and Treasurer, J. P. Jones, both of Charleston. Time and place of next meeting, January 18-19, at Charleston.

Cook County—President, Jonathan Periam, 526 Englewood avenue, Chicago; Secretary and Treasurer, C. J. Lindeman, 145 LaSalle street, Chicago. Time of next meeting, March 7-8, 1899.

Crawford County—President, S. S. Reinoehl, New Hebron; Secretary, James A. Hill, Robinson; Treasurer, J. D. Trimble, Trimble. Time and place of next meeting, January 31-February 1, 1899, at Robinson.

Cumberland County—President, P. J. Bowman, Greenup; Secretary, A. H. Yanaway, Toledo; Treasurer, Miss Mollie Eskridge, Toledo. Time and place of next meeting, January 26-27, 1899, at Toledo.

DeKalb County—President, E. C. West; Secretary and Treasurer, B. A. Williams, both of Sycamore.

DeWitt County—President, C. Y. Miller, Maroa; Secretary, Frank Cline, Clinton; Treasurer, Samuel Newell, Clinton. Time and place of next meeting, January 11-13, 1899, at Clinton.

Douglas County—President, Jos. Hemingway; Secretary, Jos. Coombe; Treasurer, John Burkey, all of Arcola. Time and place of next meeting, January 19-20, at Tuscola.

DuPage County—President, Chester D. Bartlett, Bartlett; Secretary, Royal T. Morgan, Wheaton; Treasurer, James W. McKee, Eola.

Edgar County—President, J. M. Hollingsworth, Ridge Farm; Secretary, Mrs. Mary Fell, Warrenton; Treasurer, C. D. Smith, Grandview. Time of next meeting, January 18-19, 1899.

Edwards County—President, Albert Fewkes; Secretary, Walter Rigg; Treasurer, Joseph Skeavington, all of Albion, Ill. Time of meeting, November 29-30, 1898, at Albion.

Effingham County—President, J. H. Loy, Effingham; Secretary and Treasurer, Wm. Hirtzell, Shumway. Time of next meeting, January 24-25, 1899.

Fayette County—President, J. G. Wills; Secretary, George F. Houston; Treasurer, Dr. R. T. Higgins, all of Vandalia. Place of next meeting is Vandalia.

Ford County—President, T. J. Sowders, Piper City; Secretary, H. Carpenter, Piper City; Treasurer, George Arnott, Paxton. Place and time of next meeting, Piper City, January 12-13, 1899.

Franklin County—President, J. Marshal Jones; Secretary, W. H. Dorris; Treasurer, C. Moore, all of Benton. Place of next meeting is Benton, Nov. 15-16, 1898.

Fulton county—President, John Prickett; Secretary, Henry Rice; Treasurer, Henry Bordner, all of Lewiston.

Gallatin County—President, H. Ives, Shawneetown; Secretary, Geo. Hanlon, Shawneetown; Treasurer, W. A. Peeples, Shawneetown. Time of next meeting, Dec. 12-14, 1898; place, Shawneetown.

Greene County—President—C. W. Holnback, Rockbridge; Secretary, S. E. Simpson; Treasurer, B. C. Hodges, of Carrollton. Time and place of next meeting, Greenfield, Feb. 1-2, 1899.

Grundy County—President, Willis A. Clark, Carbon Hill; Secretary, R. H. Dewey, Mazon; Treasurer, J. N. Woods, Gardner. Next meeting to be held at Morris.

Hamilton County—President, A. J. Yates; Secretary, Ed. H. Bowen; Treasurer, John Judd, all of McLeansboro. Time of next meeting Dec. 8-9, at McLeansboro.

Hancock County—President, Wm. A. Moore, Elvaston; Secretary, F. C. Sinele, Carthage; Treasurer, W. B. Marvel, Carthage. Time of next meeting Nov. 15-16, 1898. Place, Carthage.

Hardin County—Time of next meeting, Dec. 15-16, 1898. Place, Elizabethtown.

Henry County—President, W. Ringle, Osco; Secretary, D. O. Hinman, Cambridge; Treasurer, F. J. Stoughton, Osco. Time and place of next meeting, Jan. 24-25, 1899, at Osco.

Henderson County—President, T. N. Baird, Biggsville; Secretary, E. D. Rankin, Biggsville; Treasurer, E. D. Rankin, Biggsville. Time and place of next meeting, Nov. 24-25, 1898, at Oquawka.

Iroquois County—President, David Brumback Danforth; Secretary, Elmer Matkins, Watseka; Treasurer, H. C. Center, Watseka.

Jackson County—President, J. C. Scott; Secretary, T. C. McKinney, both of Carbondale; Treasurer, J. Van Cloister, Murphysboro. Time of next meeting, Nov. 15-16, 1898, at Carbondale.

Jasper County—President, W. C. Gillson, Lis; Secretary and Treasurer, A. A. Nees, Newton. Time and place of next meeting, Jan. 25-26, 1899, at Newton.

Jefferson County—President, L. N. Beal, Mt. Vernon; Secretary and Treasurer, John R. Piercy, Mt. Vernon. Place of next meeting is Mt. Vernon, Nov. 17-18, 1898.

Jersey County—President, E. A. Riehl, Alton; Secretary and Treasurer, J. W. Becker, Jerseyville. Place of next meeting is Jerseyville.

JoDaviess County—President, James R. Berryman, Scales Mound; Vice-President, G. W. Pepon, Warren; Secretary and Treasurer, John Dallyn, Galena, Box 721. Time and place of next meeting, Feb. 1-2, 1899, at Scales Mound.

Johnson County—President, W. S. Wymore; Secretary, W. C. Simpson; Treasurer, J. W. Fleming, all of Vienna. Time of next meeting, Nov. 22-23, 1898. Place, Vienna.

Kankakee County—President, T. C. Scholberry, Union Hill; Secretary, Len Small; Treasurer, A. J. Byrnes, the last two of Kankakee.

Kendall County—President, Edmond Seeley, Kendall; Secretary and Treasurer, R. A. McClelland, Yorkville; Time and place of next meeting, January, 1899, at Yorkville.

Knox County—President, G. W. Gale, Galesburg; Secretary, O. L. Campbell, Knoxville; Treasurer, H. M. Sisson, Galesburg; Time and place of next meeting, Feb. 1-3, 1899, at Galesburg.

LaSalle County—President, G. A. Willmarth, Seneca; Secretary, Mrs. L. G. Chapman, Freedom; Treasurer, A. F. Schoch, Ottawa. Time of next meeting, Jan. 26-27, 1899.

Lawrence County—President, Robert Kingsbury, Birds; Secretary, W. E. Neal, Bridgeport; Treasurer, J. K. Dickerson, Lawrenceville. Time of next meeting Feb. 1-2, 1899. Place, Lawrenceville.

Lee County—President, Hiram Hetler, Dixon; Secretary, Roy E. Swigert, Dixon. Time and place of next meeting, Feb. 3-4, 1899, at Dixon.

Livingston County—President, Dr. S. M. Barnes, Fairbury; Secretary, O. S. Westervelt, Fairbury; Treasurer, C. S. Brydia, Fairbury. Time of next meeting, Jan. 17-18, 1899. Place, Fairbury.

Logan County—President, J. T. Foster, Elkhart; Secretary, J. W. Jones, Lincoln; Treasurer, C. W. Blackburn, Lincoln.

Macon County—President, W. H. Bean, Blue Mound; Secretary, C. A. Thrift, Forsythe; Treasurer, C. H. Scott, Mt. Zion.

Macoupin County—President, David Gore; Secretary, W. B. Ottwell, both of Carlinville; Treasurer, S. B. Dagger, Womac.

Madison County—President, L. A. Spies, St. Jacobs; Secretary and Treasurer, L. S. Dorsey, Moro.

Marion County—President, J. M. Green, Salem; Secretary, W. K. Shook, Salem; treasurer, W. C. McClelland, Sandoval.

Marshall County—President, Alfred Judd, Winona; Secretary and Treasurer, Elmer Quinn, Henry. Place of next meeting is Winona.

Mason County—President, G. G. Hopping, Havana; Secretary, Carl Ellenberger, Forest City; Treasurer, Mrs. D. L. Harpham, Havana. Time and place of next meeting, December 7-8, 1898, at Forest City.

Massac County—President, Fowler A. Armstrong, Massac Creek; Secretary, Andrew Davisson, Metropolis; Treasurer, J. F. McCartney, Metropolis. Time of next meeting, November 21-22, 1898; place, Metropolis.

McDonough County—President, Arthur Stickle, McComb; Secretary, Fred G. Miner, Adair; Treasurer, Wm. Webb, Good Hope. Time and place of next meeting, November 15-16, 1898, at Macomb.

McHenry County—President, George A. Hunt, Greenwood; Secretary, Geo. Murphy, Woodstock; Treasurer, E. H. Cook, Huntley.

McLean County—President, L. E. Skaggs, Danvers; Secretary, Henry Ringhouse, Bloomington; Treasurer, C. C. Wagner, Gilman. Time and place of next meeting, January 10-11, 1899, at Bloomington.

Menard County—President—Fred H. Rankin, Athens; Secretary, H. A. Wood, Petersburg; Treasurer, Jacob F. Bergin, Petersburg. Time and place of next meeting, January 17-18, 1899, at Petersburg.

Mercer County—President, P. M. Carnahan, Viola; Secretary, R. M. Pinkerton, Viola; Treasurer, J. G. Haverfield, Joy. Time and place of next meeting, January 17-18, 1899, at Aledo.

Montgomery County—President, W. A. Young, Butler; Secretary, E. C. Richards, Hillsboro; Treasurer, A. A. K. Sawyer, Hillsboro. Time and place of next meeting, October 26-28, 1898, at Hillsboro.

Morgan County—President, A. C. Rice, Arnold; Secretary, H. L. Doan, Jacksonville; Treasurer, A. A. Dyer, Jacksonville. Time and place of next meeting, October, 1898, at Jacksonville.

Moultrie County—President, T. H. Crowder, Bethany; Secretary, O. B. Lowe, Sullivan; Treasurer, Charles Shuman, Sullivan.

Ogle County—President, Jacob F. Swank, Forreston; Secretary and Treasurer, John Small, Huldane. Time and place of next meeting, February 2-3, 1899, at Forreston.

Peoria County—President, A. H. Bristol; Secretary, E. A. Mitchell; Treasurer, F. S. Wilmot, all of Chillicothe.

Perry County—President, W. E. Braden, Cutler; Secretary, W. T. White, Cutler; Treasurer, F. P. Anderson, Pinckneyville.

Piatt County—President, W. F. McMillan, Deland; Secretary, Thos. Lamb, Jr., Bement; Treasurer, James P. Ownby, Monticello. Time and place of next meeting, January 17-18, 1899, at Monticello.

Pike County—Secretary, C. G. Winn, Griggsville; Treasurer, R. A. Anderson.

Pope County—President, John H. Hodge; Secretary, George B. Baker; Treasurer, B. M. Lewis, all of Golconda. Time of next meeting, November 18-19, 1898; place, Golconda.

Putnam County—President, J. A. Harper, Granville; Secretary and Treasurer, W. B. Mills, Mt. Palatine.

Pulaski County—President, J. H. Conant, Villa Ridge; Secretary, A. G. Lentz, Ullin; Treasurer, John A. Waugh, Mound City. Time of next meeting, November 23-24, 1898; place, Villa Ridge.

Randolph County—President, S. S. Taylor; Secretary, James M. Clark; Treasurer, J. W. Caldwell, all of Sparta. Place of next meeting is Sparta; time, February 8-10, 1899.

Richland County—President, W. E. Poland, Olney; Secretary, Frank Brittain, Calhoun; Treasurer, R. R. Byers, Olney. Time of next meeting, February 2-3, 1899; place, Olney.

Rock Island County—F. H. Caldwell, Milan; Secretary, B. F. Fountain, Andalusia; Treasurer, L. O. Johns, Moline. Time and place of next meeting, January 10-12, 1899, at Reynolds.

Saline County—President, John J. Jones; secretary, R. A. Hall; Treasurer, W. E. Mitchell, all of Eldorado. Time of next meeting, November 17-18, 1898; place, Harrisburg.

Sangamon County—President, Ira Knight, Williamsville; Secretary, James A. Stone, Bradfordton; Treasurer, L. H. Coleman, Springfield. Time and place of next meeting, October 11-13, 1898, at Williamsville.

Schuyler County—President, James A. Teel; Secretary, George H. Mason; Treasurer, M. W. Greer, all of Rushville. Time and place of next meeting, November 17-18, 1898, at Rushville.

Scott County—President, Henry Miner; Secretary, N. R. Smithson; Treasurer, John Taylor, all of Winchester. Place of next meeting is Winchester.

Shelby County—President, D. F. Richardson; Secretary, J. F. Christman; Treasurer, Wm. Middlesworth, all of Shelbyville.

Stark County—President, E. S. Buffen, LaFayette; Secretary and Treasurer, Wilber P. Snare, Castleton. Time of next meeting is January 26-27, 1899.

St. Clair County—President, W. H. Wildeman, Freeburg; Secretary, Laura Patterson, Belleville; Treasurer, Wm. Schaurloeffel, Belleville.

Stephenson County—President, L. M. Swanzy, Ridott; Secretary, H. R. Cotta, Freeport; Treasurer, F. B. Walker, Dakota. Time and place of next meeting is Jan. 26-27, 1899, at Freeport.

Tazewell County—President, Ralph Allen; Secretary, J. O. Jones; Treasurer, James L. Reid, all of Delavan.

Union County—President, David W. Karraker; Secretary, George Baringer; Treasurer, John B. Jackson, all of Jonesboro. Place of next meeting is Jonesboro. Time, Nov. 29-30, 1898.

Vermilion County—President, G. W. Hobson, Hope; Secretary, Robert C. Smith, Danville; Treasurer, Wiley Fowler, Danville; Place of next meeting is Catlin.

Wabash County—President, Thomas Stone, Mt. Carmel; Secretary, J. E. Seiler, Mt. Carmel; Treasurer, E. B. Keneipp, Mt. Carmel. Time of next meeting, Dec. 1-2, 1898. Place, Mt. Carmel.

Warren County—President, Eli Dixon, Roseville; Secretary, J. Ed. Miller; Treasurer, O. S. Barnum, both of Monmouth. Time and place of next meeting is Nov. 22-23, 1898, at Monmouth.

Washington County—President, J. D. Maxwell, Oakdale; Secretary, Marion Merker, Nashville; Treasurer, John Meyers, Addieville. Place of next meeting is Nashville.

Wayne County—President, E. A. Rankin, Fairfield; Secretary, John Clark, Jeffersonville; Treasurer, A. R. McDaniels, Jeffersonville. Time and place of next meeting is Nov. 24-25, 1898, at Jeffersonville.

Whiteside County—President, C. A. Wetherbee, Sterling; Secretary, W. J. Johnson; Treasurer, H. L. Ewing, both of Morrison. Time of next meeting is Jan. 17-18, 1899.

White County—President, Ezekiel Hunsinger, Burnt Prairie; Secretary and Treasurer, Daniel Berry, Carmi. The place of the next meeting is Carmi. Time, Dec. 6-7, 1898.

Will County—President, A. Allen Francis, New Lenox; Secretary and Treasurer, Healy H. Alexander, Lockport.

Williamson County—President, A. Luke Ralls, Marion; Secretary, T. J. Youngblood, Marion; Treasurer, C. A. Furlong, New Denison. Time of next meeting, Nov. 16-17, 1898, at Marion.

Winnebago County—President, A. J. Lovejoy, Roscoe; Secretary, A. E. Cutler, Rockford; Treasurer, Geo. W. Collins, Rockford. Time and place of next meeting, Jan. 26-27, 1899, at Rockford.

Woodford County—President, W. G. Lindley, Minonk; Secretary, W. H. Smith, Eureka; Treasurer, George Shuman, El Paso. Time and place of next meeting, Jan. 19-20, 1899, at Minonk.

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